

# MACINNERY

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*for* JEWELERS  
SILVERSMITHS *and*  
METAL WORKERS

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TOOLS  
WORK BENCHES  
SAND BLASTS  
PRESSURE BLOWERS  
VACUUM PUMPS

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CATALOG No. 9

LEIMAN BROTHERS  
MANUFACTURERS

62 John Street  
NEW YORK



Works: Brill St. &  
Bonykamper Ave.  
NEWARK, N. J.



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## To Our Customers and Prospective Customers.

The firm of LEIMAN BROS. has been established since 1889 and during the intervening years its motto has been, and will continue to be

### High Grade Goods only at Moderate Prices.

Especial care and attention is paid to accuracy of design and construction as well as to beauty of finish.

New goods will be constantly added to this list and improvements suggested by actual experience will be promptly made.

Our plant for the manufacture of our complete line of **Jewelers', Silversmiths' and Metalworkers' Machinery, Tools and Work Benches, Sand Blasts, High Pressure Blowers and Vacuum Pumps** is located at Newark, N. J. Each department is in charge of men fully acquainted by long, practical experience with the product we are placing on the market.

Our goods may be seen on exhibition at our factory showrooms as well as at our showrooms in New York City at 62 John Street.

### Read Carefully before Ordering.

OUR extensive facilities and latest improved methods enable us to furnish a high grade product at a moderate price. Close inspection and careful supervision guarantees the character of the details of construction, every machine being given a thorough test under working conditions before shipment.

**TERMS**, cash with order, C. O. D., or 30 days credit against satisfactory commercial rating or New York City references 2% cash 10 days.

**INDIVIDUALS** or concerns who are not rated in Dun or Bradstreet or who have no individual credit with us, will facilitate shipment by remitting with order or furnishing New York City references.

**REMITTANCES** should be made in the form of express or post-office money order, certified check, or registered letter. When goods are to be sent C. O. D., 25% of the amount must accompany the order.

**CLAIMS** for errors must be made upon receipt of the goods. No goods will be received or credit given for them unless we have been previously notified that shipment is to be made and shipping instructions have been given by us.

OUR responsibility ceases as soon as the goods are delivered in good condition at the railroad station or wharf and receipt taken for same, after which all claims should be made to the carrier. Shipment subject to strikes, accidents or other causes beyond our control.

**CRATING** furnished at cost.

**PRICES** and dimensions given in this catalog are subject to change without notice. Weights and measurements are approximate only.

**DISCOUNT SHEET** accompanying this catalog should be consulted for lowest net prices. All previous prices cancelled.

62 John Street  
NEW YORK, N. Y.

**LEIMAN BROS.**

WORKS  
Brill St. & Bonykamper Ave.  
NEWARK, N. J.

New York, N. Y.

LEIMAN BROS.

Newark, N. J.

## No. 5 Triple-Geared Power Mill with Flat Rolls.

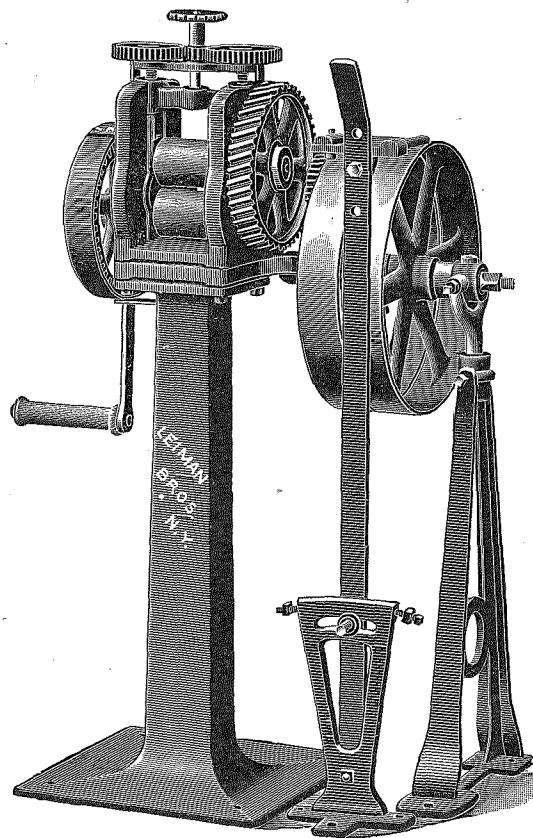


Fig. 2000

various angles. One handle furnished for hand operation.

**PRICE** - - - - - **\$140.**

ROLLS—2¾ in. diam., 4¼ in. long.

SPEED of shaft, 150 R. P. M.

PULLEYS—12 in. diam., 2½ in. face.

FLOOR SPACE—20 x 24 in.

WEIGHT—310 lbs. (shipping, 400 lbs.)

These mills are the result of years of experience and the ideas embodied are the most practical as demonstrated by years of actual service.

Gears and pinions have spiral cut teeth, giving smoothness to the stock rolled, and are covered for safety of operation.

Rolls are interchangeable.

Hanger supports shaft and pulleys taking the strain off the machine.

With the belt shifter shown the belt can be run at



## Double-Geared Power Mills.

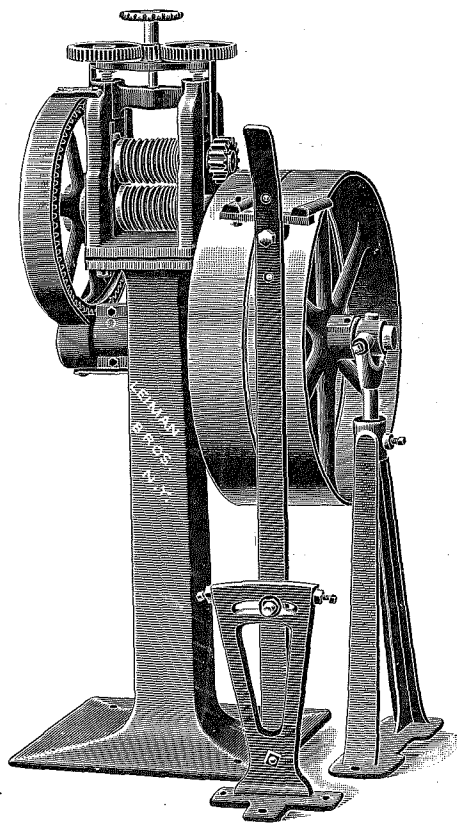


Fig. 2001

**With Square Wire or  
with One Ring and  
One Flat Roll.**

While neat in appearance, these rolls are designed to meet the requirements of hard service, and are well proportioned and substantially built.

Rolls used in our machines are of the finest crucible steel, hardened, ground and polished in the most expert manner and are interchangeable.

Gears and pinions are all machine cut with the greatest precision and on our power machines are completely covered for safety of operation.

	No. 4A	No. 4
<b>PRICE</b> with square wire rolls, - - -	<b>\$95.</b>	<b>\$120.</b>
“ with one ring and one flat roll, - - -	<b>92.</b>	<b>115.</b>
<b>ROLLS,</b> - - - - -	2¼ x 3 in.	2¾ x 4¼ in.
<b>SPEED</b> of shaft, - - - - -	100 R. P. M.	100 R. P. M.
<b>PULLEYS,</b> - - - - -	18 x 2 in.	18 x 2½ in.
<b>FLOOR SPACE,</b> - - - - -	22 x 24 in.	22 x 24 in.
<b>WEIGHT,</b> net - - - - -	275 lbs.	290 lbs.
“ shipping, - - - - -	365 lbs.	380 lbs.

For extra rolls for these machines see page 9.

## Double-Geared Hand Mills.

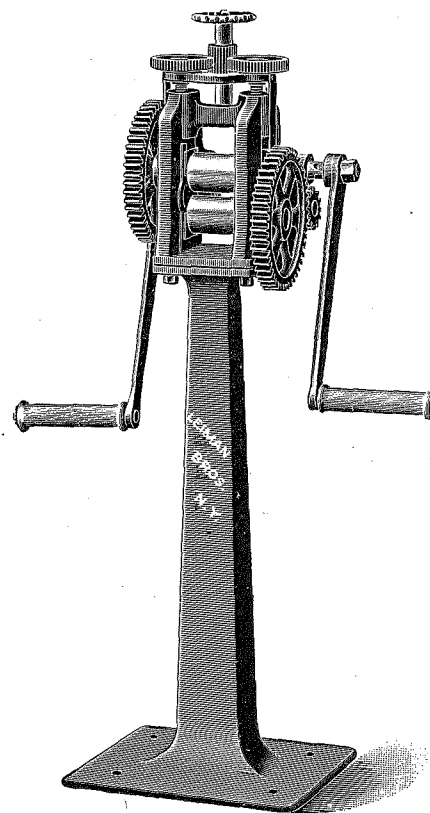


Fig. 2002

**With Flat, Square Wire  
or One Ring and One  
Flat Roll.**

Manufacturers now using our rolling mills testify to their accuracy of construction as well as to their smooth and easy running qualities.

Special attention is given to the details of cutting and fitting the grooves on our wire rolls and this results in the very best of satisfaction to the user.

All of our rolls are fully guaranteed to be of the best material and workmanship only and the bearing boxes are of bronze.

Two handles are furnished with these machines.

These mills have all the very latest improvements, including the elevating gears by which the accurate adjustment of the rolls is assured at all times.

	No. 3	No. 3B
<b>PRICE</b> with flat rolls, - - - - -	<b>\$75.</b>	<b>\$100.</b>
“ with square wire rolls, - - - - -	<b>81.</b>	<b>110.</b>
“ with one ring and one flat roll, - - - - -	<b>78.</b>	<b>105.</b>
<b>ROLLS,</b> - - - - -	2¼ x 3 in.	2¾ x 4¼ in.
<b>FLOOR SPACE,</b> - - - - -	14 x 26 in.	17 x 30 in.
<b>WEIGHT,</b> net, - - - - -	150 lbs.	215 lbs.
“ shipping, - - - - -	200 lbs.	270 lbs.

For extra rolls for these machines see page 9.



## Single-Geared Hand Mills.

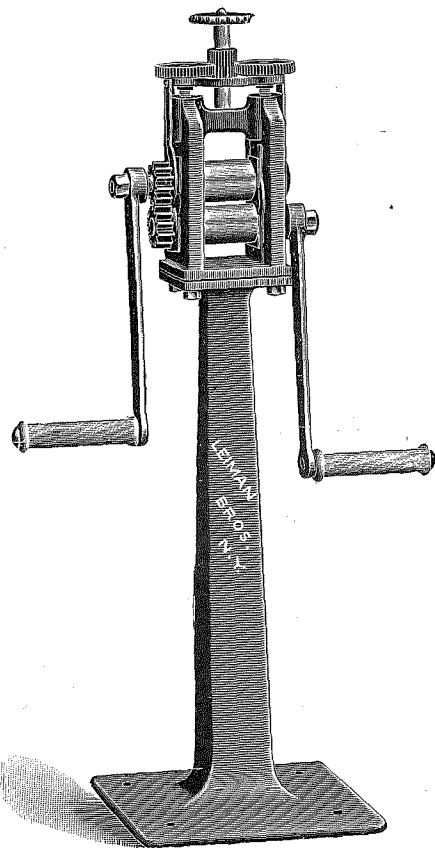


Fig. 2003

	No. 2A	No. 2	No. 2B
<b>PRICE</b> with flat rolls, - -	\$30.	\$50.	\$75.
" with square wire rolls, - -	36.	56.	85.
" with one ring and one flat roll, - -	33.	53.	80.
<b>ROLLS</b> , - - - -	1½ x 2 in.	2¼ x 3 in.	2¾ x 4¼ in.
<b>FLOOR SPACE</b> , - - -	14 x 20 in.	14 x 26 in.	16 x 27 in.
<b>WEIGHT</b> , net, - - -	65 lbs.	125 lbs.	175 lbs.
" shipping, - - -	100 lbs.	175 lbs.	225 lbs.

For extra rolls for these machines see page 9.

## With Flat, Square Wire or One Ring and One Flat Roll.

No detail in building our rolling mills is slighted in the least. The rolls are made of the finest material in the first place and the result is that they stand up under continuous use as they should.

The grooves for wire rolling are fitted with the greatest care after they are accurately cut, so that satisfaction is assured.

Our rolling mills are second to none and are so guaranteed with the confidence born of intimate acquaintance with their performances under arduous and long continued use.

## Single-Geared Hand Mills.

No. 1A

## With Flat, Square Wire or One Ring and One Flat Roll.

Furnished with or without top Elevating Gears.

This is a moderate priced rolling mill and is especially adapted for the use of dentists as well as assayers and jewellers.

The bearings are of bronze, the gears are cut from solid bar steel and the rolls are cut, ground, hardened and polished in the best manner. The top screws are of hardened steel.

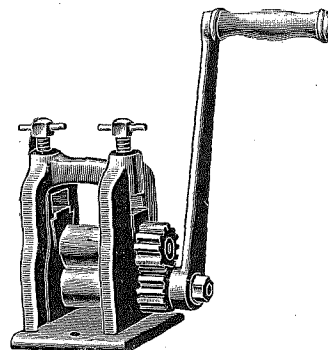


Fig. 2004

<b>PRICE</b> with flat rolls, - - - -	\$20.
" with square wire rolls, - - - -	26.
" with one ring and one flat roll, - - - -	23.
" with top elevating gears, - - - -	\$6.00 extra
" with iron column, - - - -	7.00 extra
<b>ROLLS</b> , - - - -	1½ x 2 in.
<b>WEIGHT</b> , net, - - - - 20 lbs.	90 lbs.
shipping, - - - - 35 lbs.	125 lbs.

For extra rolls for this machine see page 9.

No. 1B

## With Flat Rolls.

A low priced hand rolling mill of first class design and construction throughout.

The finest crucible steel is used for the rolls and they are ground, hardened and polished with a view to turning out the very best and smoothest work.

The bearings are of bronze, and the gears are cut from solid bar steel.

Furnished as shown with one handle and top elevating gears for insuring smoothness and accuracy.

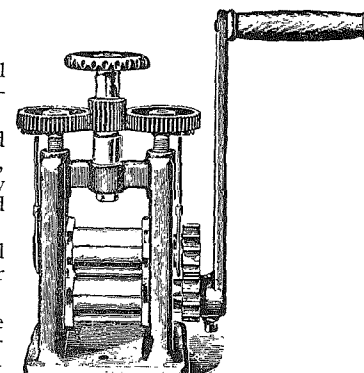


Fig. 2005

<b>PRICE</b> as shown, - - - -	\$30.
" with iron column, - - - -	37.
<b>ROLLS</b> , - - - -	2 x 3 in.
<b>WEIGHT</b> , net, - - - - 45 lbs.	110 lbs.
shipping, - - - - 60 lbs.	150 lbs.



## Single-Gear Hand Mills.

No. 1. With six fine square wire grooves, a small flat surface and a corrugated surface on the upper roll. This is a rolling mill especially adapted for the use of chain makers.

The rolls are of the same fine quality of steel as all of our other rolls and they are finished in the same expert manner. The bearings are of bronze, while the gears are cut from bar steel.

This machine is well designed and strongly constructed and is made to fasten in a vise.

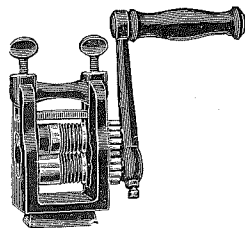


Fig. 2006

PRICE as shown	\$22.
" as shown but without corrugations	21.
ROLLS,	1 1/4 x 2 in.
BASE,	2 3/4 x 3 1/4 in.
HEIGHT,	6 in.
WEIGHT, net	8 lbs.
" shipping	15 lbs.

## WRITE US—We Manufacture

if you are in need of anything in our line, even though you don't find what you want in this Catalog, we may have it, as we are adding new goods daily.

## Complete Plants Equipped

LARGE OR SMALL IS OUR SPECIALTY

*For Jewelers, Silversmiths  
and Metalworkers*

SEND YOUR ROLLS TO US FOR REGRINDING OR YOUR OLD BLOWER FOR REPAIRS.

We can supply Motors for individual machine operation or work benches by the hundred.

GET OUR ESTIMATE—WE MAKE THE GOODS.

## Extra Rolls for Rolling Mills. Hand or Power.

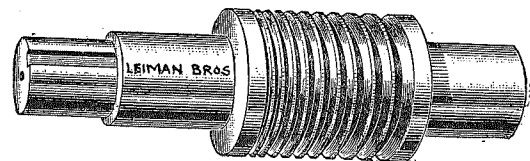
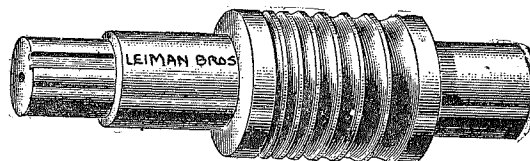


Fig. 2007

Mills	Size of Rolls	Wire—Per Pair	Prices
No. 1A	1 1/2 in. diam., 2 in. long		Single Ring Roll
" 2A	" " " " " "	\$20.	\$10.
" 2	2 1/4 " " " " " "	20.	10.
" 3	" " " " " "	30.	15.
" 4A	" " " " " "	30.	15.
" 2B	2 3/4 " " " " " "	30.	15.
" 3B	" " " " " "	50.	25.
" 4	" " " " " "	50.	25.

Above prices include pinion gears for hand power and grooves cut according to the chart below.

### Grooves for Mill No.

1A-2A



2-3-4A



2B-3B-4



1A-2A



2-3-4A



2B-3B-4



Fig. 2008



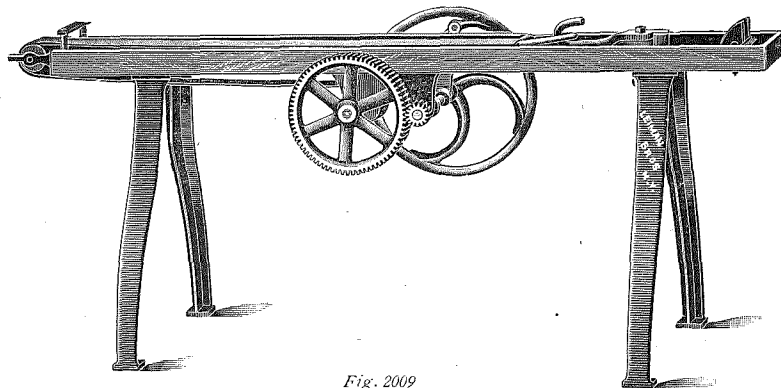
**Draw Benches.**

Fig. 2009

**No. 1**—Has iron legs, with two inch hardwood top, 10 inches wide, 84 inches long. Fly wheel and gearing at center underneath, making it possible for the operator to turn the wheel while holding the tongs to prevent slipping.

Tongs are heavy steel with 2 inch hardened jaws.

<b>PRICE</b> complete with single belt and tongs	\$45.
double	50.
<b>FLOOR SPACE</b> , - - - 26 x 95 in.	<b>HEIGHT</b> , - - - 34 in.
<b>WEIGHT</b> , - - - 245 lbs.	<b>SHIPPING WEIGHT</b> , - about 350 lbs.

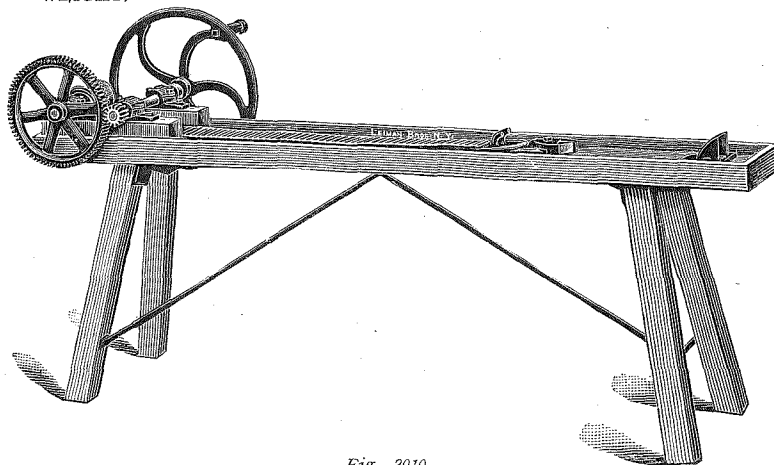


Fig. 2010

**No. 2**—Has hard wood legs and top, 10 inches wide, 84 inches long. Tongs are heavy steel with 2 inch hardened jaws.

<b>PRICE</b> complete with single belt and tongs	\$30.00
double	35.00
<b>FLOOR SPACE</b> , - - - 26 x 95 in.	<b>HEIGHT</b> , - - - 27 in.
<b>WEIGHT</b> , - - - 195 lbs.	<b>SHIPPING WEIGHT</b> , - about 275 lbs.

**WE ALSO MAKE POWER DRAW BENCHES,**

**No. 3. 4Foot Draw Bench. Hand Power.**

Iron draw bench for hand power. Equipped with an endless chain upon which the steel tongs furnished with the machine are placed. There is a wire coiler and an adjustable device which holds the draw-plate.

**FLOOR SPACE**,  
11 x 13 x 50 in.  
**WEIGHT**,  
105 lbs.

**PRICE**, complete  
with tongs, \$20.

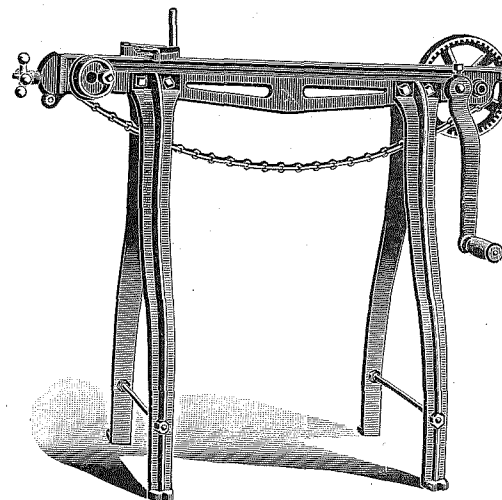


Fig. 2011

**No. 4 Rotary Draw bench.**

Made entirely of iron and steel and has two wire coilers. Fitted with loose and tight pulleys. Suitable for drawing fine wire.

**FLOOR SPACE**  
18 x 34 in.

**HEIGHT**,  
36 in.

**WEIGHT**,  
190 lbs.

**PULLEYS**,  
18 x 2 in.  
(Loose, and tight)

**PRICE**, \$60.

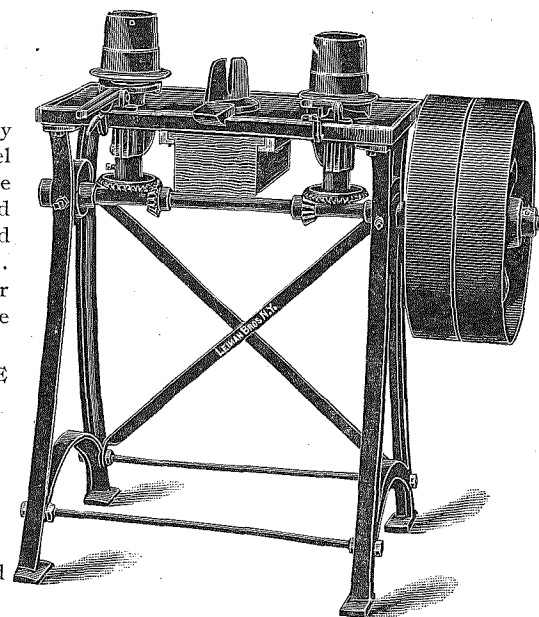


Fig. 2012



### Bracelet Winding Machines. Hand Power.

PRICE, - - - \$12.00  
Without Mandrels

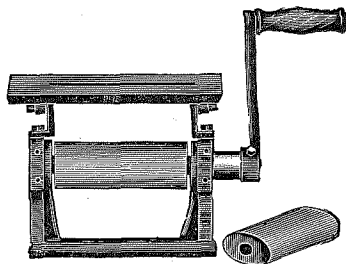


Fig. 2013



Fig. 2014

### Bracelet Winding Mandrels. Hollow—Straight—Oval.

Length, - - - 6 in.  
All sizes

PRICE, - - - \$5.00

### Bracelet Mandrels. Hollow—Taper— Oval.

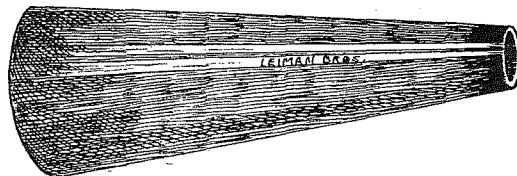


Fig. 2015

Takes sizes  
10 in. long. 6½ to 11 in.,  
13 in. long. 5 to 9 in.,

Price  
\$5.50  
5.50

### Ring Mandrels. Steel—not Hardened.



Fig. 2016

Length, 13½ in. Taper, ½ to 1 in.  
PRICE, - - - \$1.00

### Polishing Heads.

These machines are constructed after ideas that have been tested by years of practical operation and have proved the most serviceable, running for years without repairs.

The bearings are longer than those of the ordinary type of polishing head and are of our latest improved self-oiling style, which reduces the wear to almost nothing while insuring a steady machine well oiled at all times.

The bodies of the machines are heavy and the weight so distributed as to obtain the greatest rigidity and strength.

The spindles are of special spindle steel, accurately turned and fitted and are furnished in standard styles as shown below. Unless otherwise ordered, machines are shipped with style B1 spindle. With our No. 2 and No. 12 heads a belt shifter is furnished with styles B, D and F spindles.

The No. 2 open type head can be driven from above or below, while the covered type can only be driven from below.

The covered type head insures safety to the operator, while cleanliness is evidenced to a marked degree when they are used. They are therefor to be preferred to the open type.

Styles  
of spindles

Lengths of spindles for		No. 12 heads	No. 2 heads
A	A1	23 in.	20 in.
	A2	30 "	24 "
	A3	37 "	28 "
B	B1	23 "	20 "
	B2	30 "	24 "
	B3	37 "	28 "
C	C1	25 "	20 "
	C2	32 "	24 "
	C3	40 "	28 "
D	D1	25 "	20 "
	D2	32 "	24 "
	D3	40 "	28 "
E	E1	27 "	20 "
	E2	35 "	24 "
	E3	43 "	28 "
F	F1	27 "	20 "
	F2	35 "	24 "
	F3	43 "	28 "

Fig. 2017

Always state length of spindle as well as style when ordering.  
Styles of spindles furnished with No. 2 and 12 polishing heads.



## No. 12 Polishing Heads.

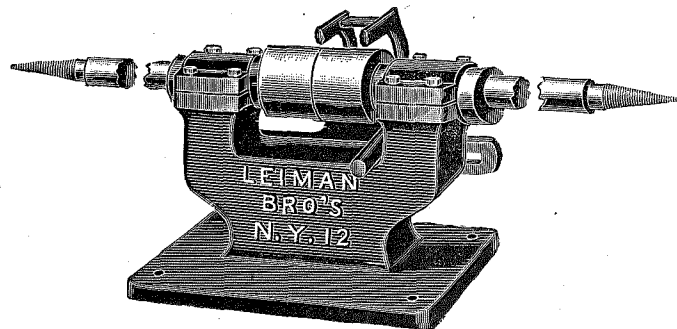


Fig. 2018

Height to center of spindle,	8 in.
Diameter of spindle,	1 $\frac{3}{8}$ in.
"    "    between flanges,	1 in.
Space between flanges,	1 in.
Bearings, double ring self-oiling.	Taper points removable.
Weight, net,	58 lbs.
shipping,	85 lbs.

This head is designed and constructed on the same lines as our No. 2 heads and is especially adapted for heavy work.

Unless otherwise ordered the B1 spindle is furnished.

A belt shifter is furnished with styles B, D and F spindles.

This machine must be driven from above but will be furnished for driving from below when so ordered.

Styles of Spindles	Length	Price
A1	23 in.	\$20.
A2	30 "	21.
A3	37 "	22.
B1	23 "	21.
B2	30 "	22.
B3	37 "	23.
C1	25 "	21.
C2	32 "	22.
C3	40 "	23.
D1	25 "	22.
D2	32 "	23.
D3	40 "	24.
E1	27 "	22.
E2	35 "	23.
E3	43 "	24.
F1	27 "	23.
F2	35 "	24.
F3	43 "	25.

See page 13 for chart showing above styles of spindles.

## No. 2 Polishing Heads.

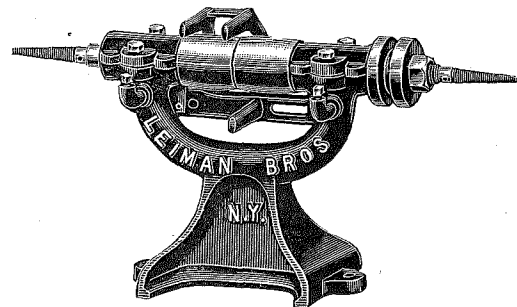


Fig. 2019

No. 2, open type, for up or down belt.



Fig. 2020

No. 2, covered type, for down belt.

Height to center of spindle,	8 in.
Diameter of spindle,	$\frac{7}{8}$ in.
"    "    between flanges,	$\frac{3}{4}$ in.
Space between flanges,	$\frac{3}{4}$ in.
Bearings, double ring, self-oiling.	Taper points removable.
Weight, net, open type,	28 lbs.
shipping, open type,	45 "
Weight, net, covered type,	58 lbs.
shipping, covered type,	75 "

Unless otherwise ordered the B1 spindle is furnished.

A belt shifter is furnished with styles B, D and F spindles.

Styles of Spindles	Length	Price, open type	Price, covered type
A1	20 in.	\$12.00	\$18.00
A2	24 "	12.25	18.25
A3	28 "	12.50	18.50
B1	20 "	13.00	19.00
B2	24 "	13.25	19.25
B3	28 "	13.50	19.50
C1	20 "	13.00	19.00
C2	24 "	13.25	19.25
C3	28 "	13.50	19.50
D1	20 "	14.00	20.00
D2	24 "	14.25	20.25
D3	28 "	14.50	20.50
E1	20 "	14.00	20.00
E2	24 "	14.25	20.25
E3	28 "	14.50	20.50
F1	20 "	15.00	21.00
F2	24 "	15.25	21.25
F3	28 "	15.50	21.50

See page 13 for chart showing above styles of spindles.



## Polishing Heads.

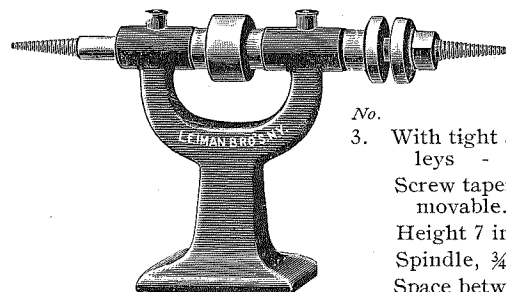


Fig. 2021

No. 3. With grooved cone or flat pulley - **\$6.00**

No. 3. With tight and loose pulleys - **\$7.00**  
Screw taper point on right removable.  
Height 7 in.  
Spindle,  $\frac{3}{4}$  x 18 in.  
Space between flanges,  $\frac{1}{2}$  in.  
Weight, 10 lbs.

No. 3A. With single flat pulley - **\$6.00**  
3A. With tight and loose pulleys - **7.00**  
Height, 7 in.  
Spindle,  $\frac{3}{4}$  x 20 in.  
Space between flanges,  $\frac{3}{4}$  in.  
Diam. between flanges,  $\frac{5}{8}$  in.  
Weight, 10 lbs.

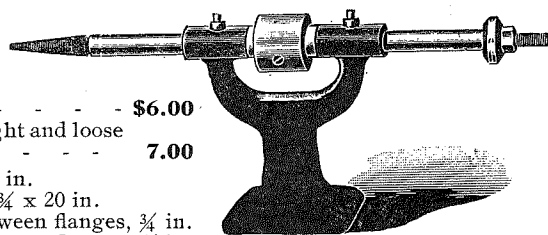


Fig. 2022

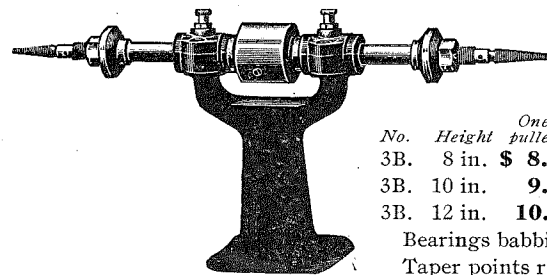


Fig. 2023

Spindle,  $\frac{3}{4}$  x 22 in.  
Space between flanges,  $\frac{3}{4}$  in.  
Diameter between flanges,  $\frac{5}{8}$  in.  
Weight, 18 lbs.

No.	Height	One pulley	Loose and tight pulleys
3B.	8 in.	<b>\$ 8.00</b>	<b>\$ 9.00</b>
3B.	10 in.	<b>9.00</b>	<b>10.00</b>
3B.	12 in.	<b>10.00</b>	<b>11.00</b>

Bearings babbitted.  
Taper points removable.  
Base, 6 x 6 in.

## Polishing Heads.

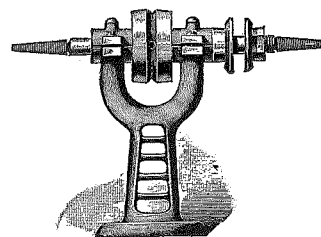


Fig. 2024

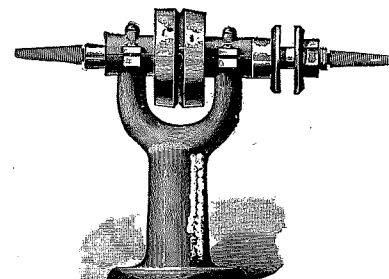


Fig. 2025

No. 21		No. 22	
<b>PRICE,</b>	<b>\$1.50</b>	<b>PRICE,</b>	<b>\$2.50</b>
Height to center of spindle,	- 6 in.		
Adjustable bearing boxes.		Screws and caps of brass.	
Spindle,	$\frac{3}{8}$ x 8 in.	$\frac{1}{2}$ x 10 in.	
Between flanges,	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	
Grooved pulley,	1 $\frac{7}{8}$ in.	2 $\frac{1}{4}$ in.	
Weight,	3 lbs.	4 $\frac{3}{4}$ lbs.	

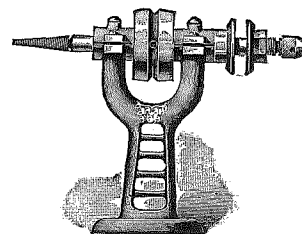


Fig. 2026

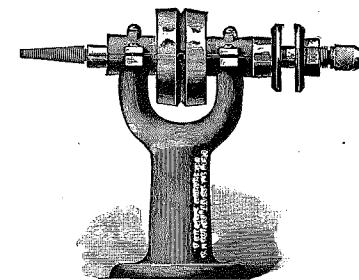


Fig. 2027

No. 23  
**PRICE, \$2.50**  
Same as No. 21 fitted with chuck, 0 to  $\frac{5}{16}$  in.

No. 24  
**PRICE, \$4.00**  
Same as No. 22 fitted with chuck, 0 to  $\frac{1}{4}$  in.



## Polishing Heads and Lathes.

## Polishing Head No. 28.

PRICE, - \$4.50

Spindle, - ½ in.

Pulley, - 2¼ in.

Chuck, 0 to ¼ in.

Finish Japan.

Dimensions, 2½ x  
6 x 11 in.

Weight, - 8½ lbs.

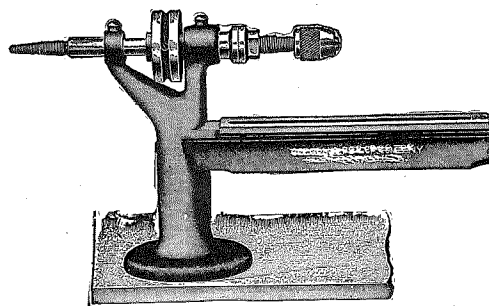
Shipping weight,  
15 lbs.

Fig. 2028

## Polishing Lathe No. 29½.

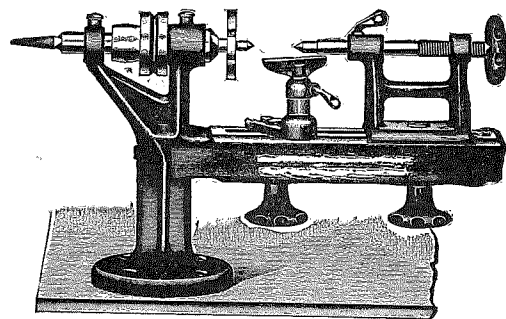


Fig. 2029

PRICE, - \$10.

Screw tail stock.

Tee rest.

Face plate.

Saw arbor.

Taper threaded  
polishing spin-  
dle.

Chuck 0 to ⅝ in.

Bed, 12 in.

Swing, 5 in.

Two step cone pulley, 1⅜ and 1 in. diam., ¾ in. wide. Large step  
grooved.

Dimensions, - - - - - 3½ x 7½ x 12½ in.

Weight, - - - - - 18 lbs.

Shipping weight, - - - - - 35 lbs.

## Foot Power Polishing Machines.

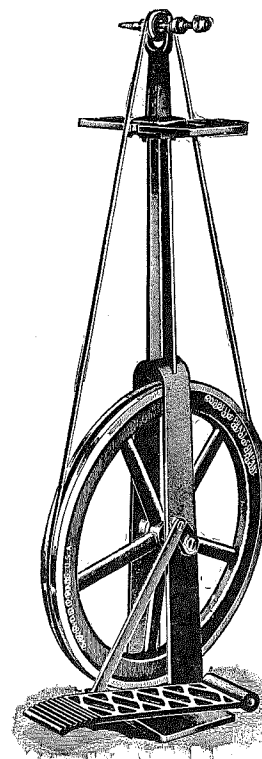
PRICE, - - - - - \$10.

No.			
123.	Height, - - - - -	45 in.	
	Wheel, - - - - -	20 in. diam.	
	Pulley, - - - - -	1⅝ in. diam.	
	Iron Table, - - - - -	5 x 10 in.	
	Weight, - - - - -	65 lbs.	
	Shipping weight, - - - - -	95 lbs.	
	Chuck, - - - - -	0 to ⅝ in.	
	Round belt.		

Flywheels are heavy and well-balanced,  
producing power and ease in operation.

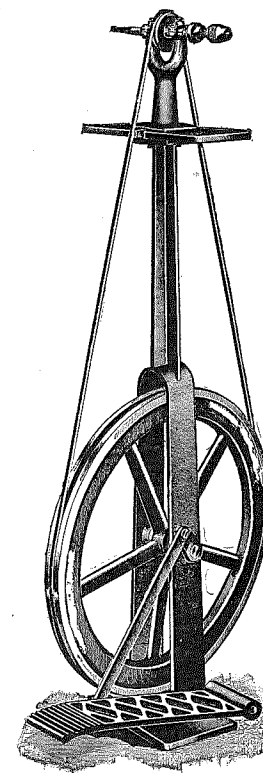
No. 23 Polishing Head.

Finish—Black and Red Enamel.

Fig. 2030  
No. 123 Polishing Machine

PRICE, - - - - - \$11.25

No.			
124.	Height, - - - - -	45 in.	
	Wheel, - - - - -	20 in.	
	Pulley, - - - - -	2¼ in.	
	Iron Table, - - - - -	5 x 10 in.	
	Weight, - - - - -	67 lbs.	
	Shipping weight, - - - - -	100 lbs.	
	Chuck, - - - - -	0 to ¼ in.	
	No. 24 Polishing Head.		
	Round belt.		
	Finish—Black and Red Enamel.		

Fig. 2031  
No. 124 Polishing Machine



### Polishing Benches.

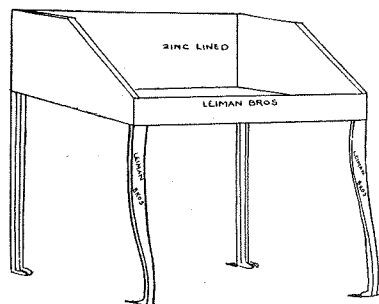


Fig. 2032

These polishing benches are lined with heavy zinc. Bottoms are of 2 inch lumber. The depth at the rear inside is 10½ inch, front 3¾ inch. Height from floor to outside of bottom, 35 inch. Furnished with either iron or wood legs.

Sizes	Iron Legs.		Wood Legs.	
	Price	Weight	Price	Weight
24 x 40 in.	\$12.00	132 lbs.	\$ 8.00	105 lbs.
24 x 85 "	16.50	232 "	12.90	200 "
24 x 130 "	21.00	352 "	18.00	300 "
24 x 174 "	26.50	456 "	22.75	395 "
24 x 220 "	30.25	575 "	26.50	500 "

### Polishing Dust Hoods.

**PRICE, - - - \$3.00**

Width at front, - - 9½ in.

" at rear, - - 3½ in.

Height, - - - 15 in.

Depth, - - - 15½ in.

Weight, - - - 3 lbs.

Shipping weight, - - 15 lbs.

Shipping dimensions 10½ x 16 x 16½ in. Made of sheet tin with wired edges.

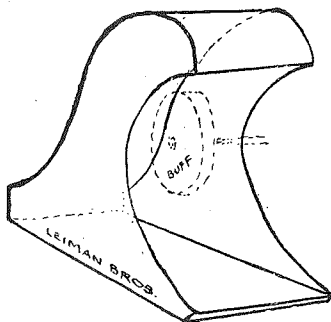


Fig. 2033

### Polishing Dust Collecting Outfits.

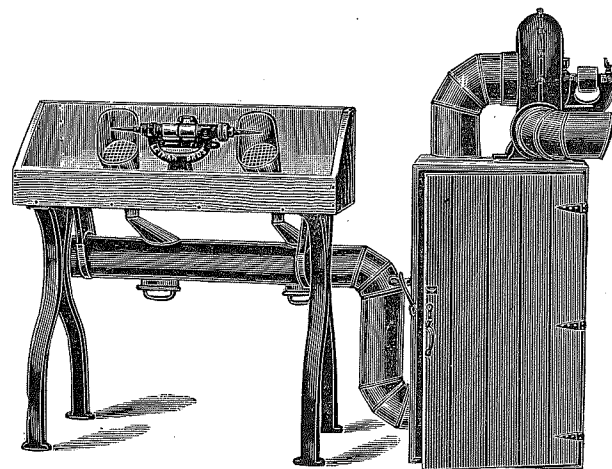


Fig. 2034

**PRICE of above outfit complete, as shown, about - \$100.**

This illustration shows one of several styles of outfits we furnish. As the classes of work vary, we furnish the outfits accordingly.

In sending for prices, and particulars, be sure to give us an idea of the class of work to be done, also the amount of space available for the outfit.

These outfits pay for themselves in a very short time not only in increased receipts from sweeps, but in neatness of shop conditions.

Made entirely of sheet iron, thereby conforming to the rules of all fire underwriters, being absolutely fire-proof.

Full directions for erecting are sent with each outfit.



**Exhaust Blowers.**

No.	Inlet and Outlet	Floor space	Weight	Shipping weight about	Pulley	Price
1	6 in.	16 x 19 in.	100 lbs.	140 lbs.	3 x 2 1/4 in.	\$25.
3	9 in.	24 x 27 in.	220 lbs.	300 lbs.	5 x 4 in.	39.

These exhaust blowers have ring oil bearings and run at slow speeds. The construction of the wings makes it unnecessary to run at the great speed generally required for blowers of this type.

They are noiseless in operation and very effective.

**LEIMAN BROS.**

Protected and Enclosed Types

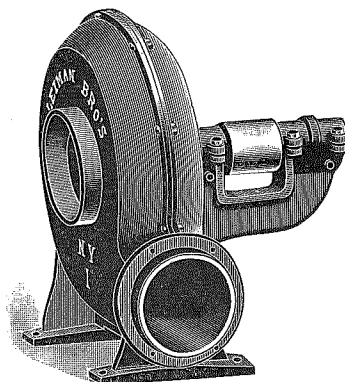
**Direct Current Motors.**

Fig. 2035.

**Protected Type Motor.**

Free access of air to windings.  
Maximum cooling surface.

Commutator and brushes open to inspection at all times.

**Enclosed Type Motor.**

The enclosed type of motor should be used where metal chips or filings are liable to accumulate on the windings and in wet places to prevent interference with the interior of the motor.

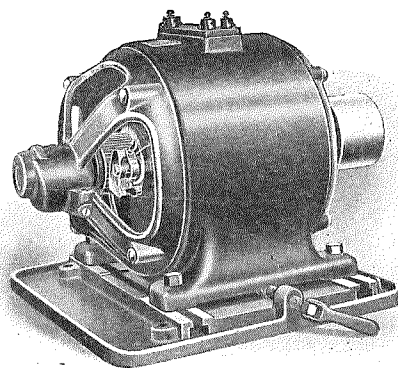


Fig. 2036

**Advantages of Motor Drive.**

Ready, day or night, by closing switch.

Runs only while production is in progress.

Runs equally well on floor, wall or ceiling.

By individual machine drive makes each machine an independent unit, increases production, cuts out belt and shafting loads, which often reach 25 to 40 per cent. of power consumed, cuts down production costs, allows arrangement of machines to best advantage, taking the power to the machines rather than the machines to the power, is productive of clean, light, airy shops and clear head room.

Net prices quoted upon application.

Always give precise particulars as to work to be done and nature and number of volts of your electric current.

No skilled help to operate.

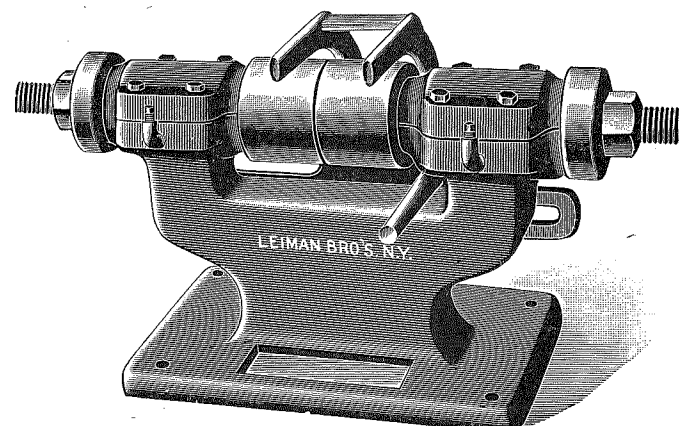
**Lap Heads.**

Fig. 2037

The bearings are double ring oilers, reducing the wear to almost nothing. Heavily and strongly constructed with loose and tight pulleys and belt shifter or single tight pulley. Double flanges.

**PRICE,** - - - - - \$23.

Height, - - - - - 8 in.

Distance flange to flange, - - - - - 14 1/2 in.

Size of flanges, - - - - - 3 in.

" shaft, - - - - - 1 in.

Length of shaft, - - - - - 19 1/2 in.

Speed about 1400.

Weight, - - - - - 54 lbs.

Shipping weight, - - - - - 75 lbs.

**Laps.****Composition Laps.**

Thickness about 1/2 inch.

6 in. diam.	- - - - -	\$ 6.00
7 " "	- - - - -	7.00
8 " "	- - - - -	8.00
9 " "	- - - - -	9.00
10 " "	- - - - -	10.00

**Wood Laps.**

Maple or Poplar.

6 in. diam.	- - - - -	\$.35
7 " "	- - - - -	.40
8 " "	- - - - -	.45
9 " "	- - - - -	.50
10 " "	- - - - -	.60

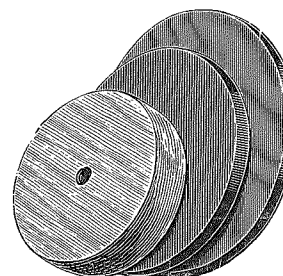


Fig. 2038

**Lap charging rollers of hardened steel,** - - - - - \$2.00



### Lapidary Machine. For Power or Foot Power.

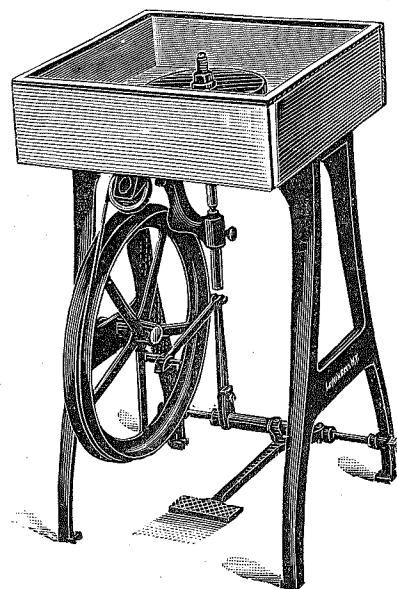


Fig. 2039

**PRICE, - \$45. with lap.**

Strongly constructed with zinc lined box, iron legs and heavy flywheel.

Spindle same as illustrated below is used. One 9 inch lead lap is furnished.

Floor space, - 20 x 24 in.

Zinc lined box, - 20 x 24 in.

Furnished with motor when so desired.

### Lapidary Spindle. Power or Foot Power.

**PRICE, - - - - - \$15.**

This upright spindle is especially constructed for lapidaries. The shaft is made of special spindle steel. The lower end tapered, rests on a hard (Lignum Vitae) wood plug.

Bearings split bronze.

Spindle, - - - - -  $\frac{3}{4}$  x 12 in.

Diam. between flanges, -  $\frac{3}{4}$  in.

Weight, - - - - - 16 lbs.

Shipping dimensions, -  $3\frac{1}{2}$  x 11 x 18 in.

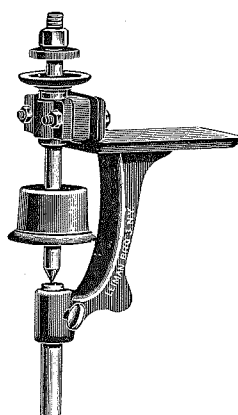


Fig. 2040

### Grinder Heads.

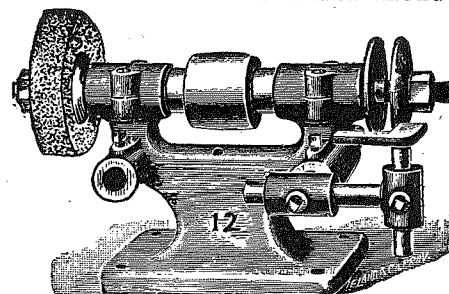


Fig. 2041

Weight, - - - 65 lbs.  
Dimensions, - 12 x 12 x 24 in.  
Base, - - - - -

**No. 12.**

**PRICE, - \$26.**  
Height, - - - 8 in.  
Spindle, - - - 1 x 22 in.  
Space between flanges, - 1 in.  
Diam. between flanges, - 1 in.  
Takes wheels, 12 x 2 in.  
Bearings, double ring oilers.  
Two adjustable and detachable rests.

Shipping weight, - 105 lbs.  
Pulley,  $3\frac{1}{2}$  in. diam.,  $3\frac{3}{4}$  in. wide  
- 8 x 12 in.

**No. 40.**

**PRICE, - - - \$10.**  
Height, - - - 8 in.  
Spindle, - - - 12  $\frac{1}{2}$  in.  
Diam. between flanges,  $\frac{3}{4}$  in.  
Takes wheels, - 8 x 1 in.  
Pulley, - - - 2 x 1  $\frac{1}{2}$  in.  
Adjustable and detachable rests.  
Weight, - - - 24 lbs.  
Shipping weight, 29 lbs.

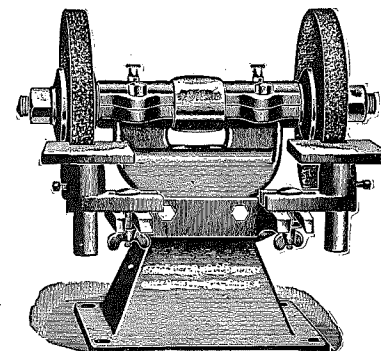


Fig. 2042

**No. 26  $\frac{1}{2}$ .**

**PRICE, - - - \$8.00**  
Height, - - - 7 in.  
Spindle, - - - 9 in.  
Diam. between flanges, -  $\frac{1}{2}$  in.  
Takes wheels, - 8 x  $\frac{3}{4}$  in.  
Adjustable and detachable rests.  
Weight, - - - 15 lbs.  
Shipping weight, - 25 lbs.  
" dimensions,  $7\frac{1}{4}$  x 9 x  $12\frac{3}{4}$  in.

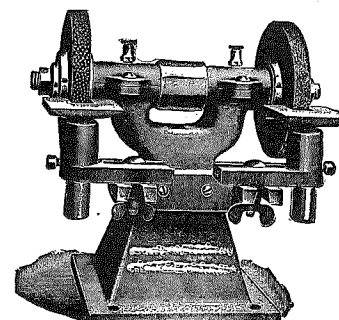


Fig. 2043

**Wheels shown on grinder heads are not furnished.**



### No. 30 Bench Speed Lathe.

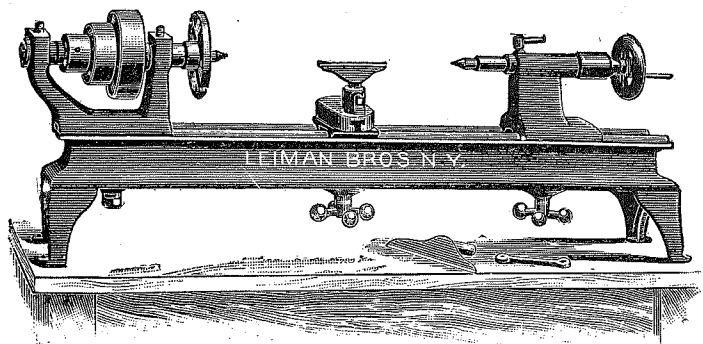


Fig. 2044

<b>PRICE,</b>	-	-	-	-	-	-	-	-	-	<b>\$25.</b>
Bed,	-	3 feet.	Between centers,	-	20 in.	Swing,	-	8 in.		
Furnished with 3 step cone pulley for 1 1/4 in. belt—face plate and self-discharging centers.										
Hole in spindle,	-	-	-	-	-	-	-	-	-	1/2 in.
Weight,	-	-	-	-	-	-	-	-	-	80 lbs.
Shipping weight,	-	-	-	-	-	-	-	-	-	100 lbs.

### No. 125 Bench Speed Lathe.

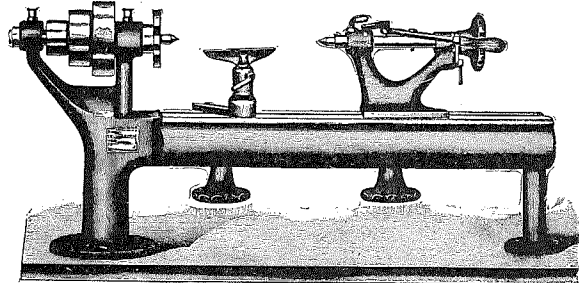


Fig. 2045

<b>PRICE,</b>	-	-	-	-	-	-	-	-	-	<b>\$20.</b>
Furnished with 3 jaw chuck, 0 to 1/4 inch; face plate, saw arbor and centers.										
Pulley, 3 step cone,	-	-	-	-	-	-	-	-	-	1 1/2, 2 1/2 and 3 1/2 in. diam.
Hole in spindle,	-	-	-	-	-	-	-	-	-	3/8 in. No. 1 Morse taper.
Screw and lever feed in tailstock.										
Bed,	-	25 in.	Between centers,	-	12 in.	Swing,	-	7 in.		
Weight,	-	-	32 lbs.	Shipping weight,	-	-	-	-	-	50 lbs.

### Sensitive Drill Presses.

#### Power and Foot Power.

#### Leiman Bros. Sensitive Drill Presses

are especially adapted for the jeweler, manufacturer of novelties and those requiring a rigid machine of the best class.

The box is zinc lined, 17 x 28 inches, mounted on an iron post.

In operating these machines both hands of the operator are free at all times to hold the work, the chuck being brought down to the article by the pressure of the foot on the lever, while in the foot power machine the plate is raised by pressure of the elbow. Very accurate work is thus assured.

When drilling a quantity of articles to a uniform depth, the machines may be set and locked, insuring freedom of action, without danger of spoiling any of the articles drilled.

High or low speed may be used with the power machine which takes a flat belt, while the foot machine may be adapted for power at slight expense if required.

Drills from the very finest up to 5/16 inch may be used with the new patented geared chuck which is furnished on these machines.

A cheaper grade of drilling machines for hand and power, of smaller capacity and for lighter work, will be found on page 30.



**Sensitive Drill Press.—Power.**

PRICE, as shown with

chuck, - - - **\$36.**  
 Chuck, - - - 0 to  $\frac{5}{16}$  in.  
 Zinc lined box, 17 x 28 in.  
 Table to chuck, - 4 in.  
 Foot lever feed.  
 Vertical movement,  $1\frac{1}{2}$  in.  
 Table, - - - 6 in. diam.  
 Height of post, - 34 in.  
 Speed, - - - 1200 to 1800  
 Weight, - - - 115 lbs.  
 Shipping weight, 175 lbs.  
 No. 1. Countershaft, **\$4.00**  
 With self-lubricating  
 loose pulley, - **6.00**  
 Weight, - - - 23 lbs.

See page 27.

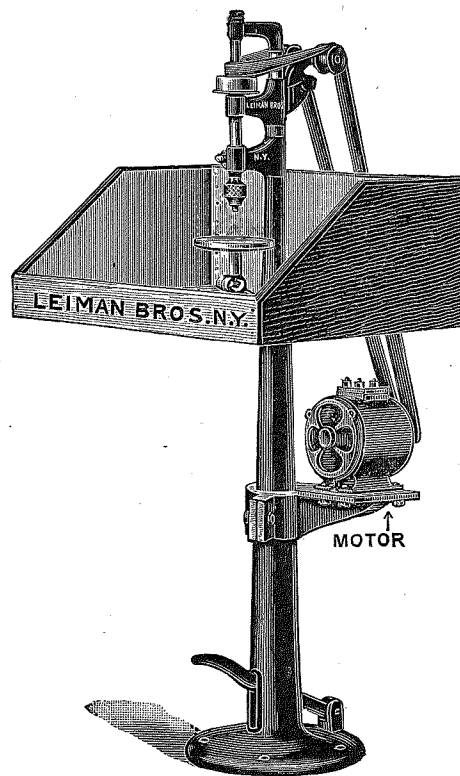


Fig. 2047

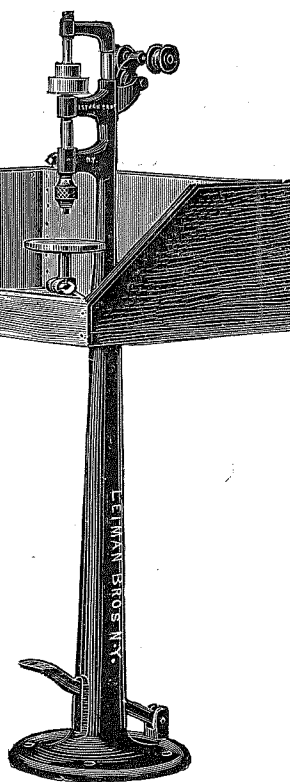


Fig. 2046

**Drill and Motor.**

Drill same as above with  
 Motor Shelf and Chuck.

PRICE, without motor, **\$38.50**

Prices on motors vary  
 according to current and  
 voltage. Prices quoted on  
 application.

See page 27.

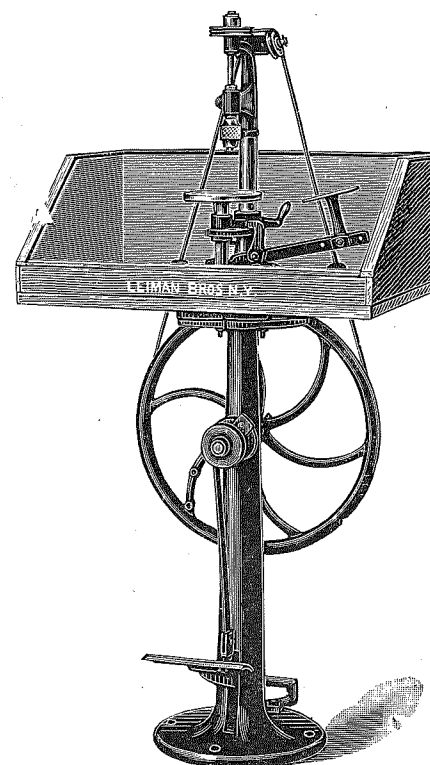
**Sensitive Drill Press.  
Foot Power.**

Fig. 2048

PRICE, with chuck, **\$40.**

Chuck, - 0 to  $\frac{5}{16}$  in.  
 Table to chuck, - 4 in.  
 Vertical move-  
 ment, - - -  $1\frac{3}{8}$  in.  
 Table, - - - 6 in. diam.  
 Swing of table, 6 in.  
 Zinc lined  
 box, -  $17\frac{1}{2} \times 28\frac{1}{2}$  in.  
 Height of post, 38 in.  
 Flywheel, 25 in. diam.  
 Weight, - 140 lbs.  
 Shipping weight, 230 lbs.  
 Shipping dimen-  
 sions,  $20 \times 31 \times 65$  in.

Arm lever feed leaving  
 both hands free for hold-  
 ing the work. Result—  
 Increased output.

This machine may be  
 converted into a power  
 drill press at any time at  
 a very slight expense.

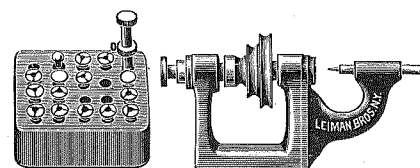


Fig. 2049

**Pearl Drilling  
Machine.**

PRICE, - **\$20.**  
 (without chucks)

Dimensions, - - - - -  
 Pulley, two step cone for round belt.  
 Speed about 1800.  
 Weight, - - - - -  
 Shipping weight, - - - - -  
 Chucks, extra - - - - -

$9\frac{1}{4}$  in. long,  $3\frac{1}{4}$  in. wide

10 lbs.

15 lbs.

**\$1.00 each.**



## Drilling Machines.

### Power Bench Drill No. 12.

PRICE, - - - \$15.

Spindle movement  $3\frac{1}{4}$  in. or may be set.

Drills to center of  $6\frac{1}{4}$  in. circle.

Table, - - -  $4\frac{7}{8}$  in. diam.

Table adjustment, - - -  $2\frac{1}{4}$  in.

Height, - - - 24 in.

Chuck to table, 8 in.

Chuck, 0 to  $\frac{1}{4}$  in.

Weight, 20 lbs.

Shipping weight, 33 lbs.

Loose pulley, 3 in.

1st step,  $3\frac{1}{2}$  in.

2nd step,  $4\frac{1}{2}$  in.

Belt shifter.

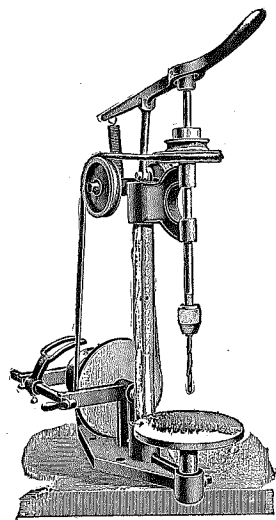


Fig. 2050

### No. 16, Drilling Machine.

Foot Power.

PRICE, - - - \$25.

Chuck, - - - 0 to  $\frac{1}{4}$  in.

Height, - - - 54 in.

Floor to table, - - - 36 in.

Chuck to table, - - - 7 in.

Table, - - -  $5\frac{1}{4}$  in. diam. adjustable.

Pulleys { large, - - - 12 in.

{ small, - - -  $1\frac{1}{8} \times 1\frac{1}{8}$  in.

Gears { large, - - -  $5\frac{3}{8}$  in. } covered.

{ small, - - -  $1\frac{3}{4}$  in. }

Finish—Enamel.

Weight, - - - 85 lbs.

Shipping weight, - - - 110 lbs.

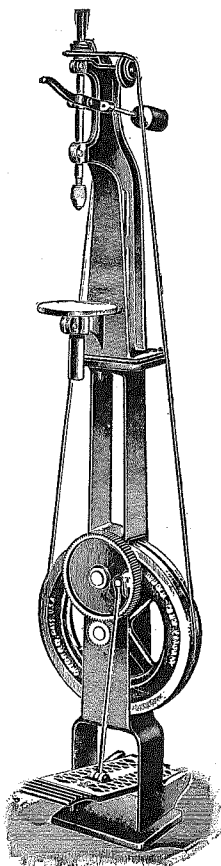


Fig. 2051

## Countershafts.

For use with drill presses, polishing lathes, bench lathes and other machinery. The No. 1 more especially for our light polishing heads and drill presses.

No. 1. PRICE, - \$4.00

With self-lubricating device on loose pulley, 6.00

Drop, - - - 6 in.

Tight and loose pul'ys,  $4 \times 1\frac{3}{8}$  in.

Driving pulley, -  $8 \times 1\frac{1}{8}$  in.

Weight, - - - 17 lbs.

Shipping weight, - 30 lbs.

Shipping dimensions, 10 x 12 x 13 in.

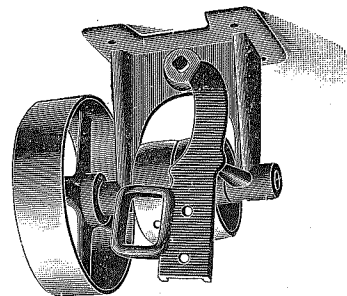


Fig. 2052

No. 2. PRICE, \$7.00

With self-lubricating device on loose pulley, - 9.00

Drop, - - - 8 in.

Tight and loose pulleys,  $5 \times 1\frac{1}{8}$  in.

Driving pulley or cone pulley, 10 or  $12 \times 2$  in.

Weight, 35 lbs.

Shipping weight, 50 lbs.

Shipping dimensions, 9 x 14 x 18 in.

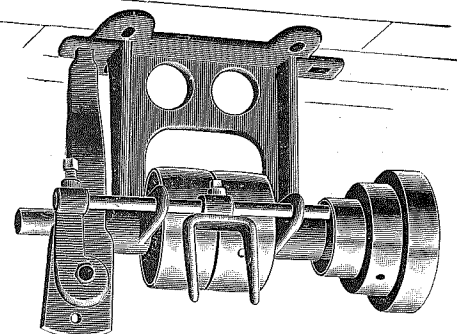


Fig. 2053

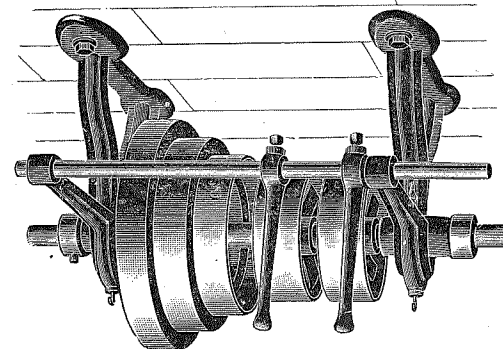


Fig. 2054

No. 3. PRICE, \$8.00

With self-lubricating device on loose pulley, - 10.50

Drop, - - - 7 in.

Tight and loose pulley,  $5 \times 1\frac{1}{8}$  in.

Driving pulley, or cone pulley, 10 or  $12 \times 2$  in.

Weight, 42 lbs.

Shipping weight, 60 lbs.

Shipping dimensions, 10 x 14 x 23 in.



### Jewelers' Work Benches.

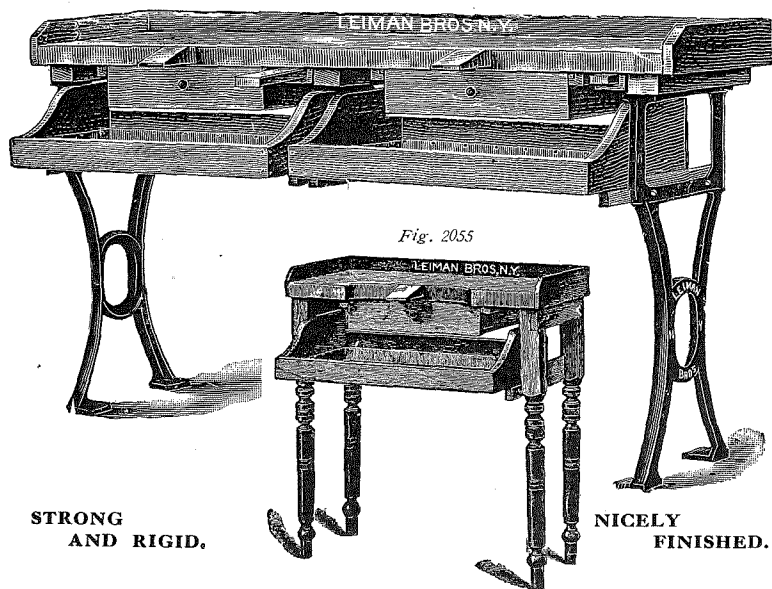


Fig. 2055

Fig. 2056

**STRONG  
AND RIGID.**

**NICELY  
FINISHED.**

Made singly and in one, two, three and four seat sections, nicely finished and suitable for office, store or factory. To prevent unnecessary obstruction on the floor a short bracket is placed between every other seat on the larger benches instead of a leg.

Gold and silver filings cannot find lodgement on the bench tops—they are of 2 inch hard, close grained maple, heavily shellaced.

The iron legs are easily fastened to the floor and when moving are taken up without injury and being cleaner and neater are recommended.

The edges of the galvanized iron of the lower pan are inserted into the wood, making it impossible for filings to find lodgement.

See next page for prices and particulars.

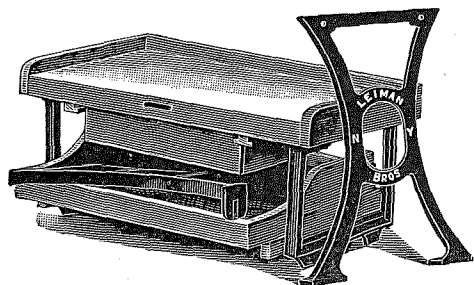


Fig. 2057

Showing sectional view of iron legs, collapsed, ready for shipment.

### Jewelers' Work Benches.

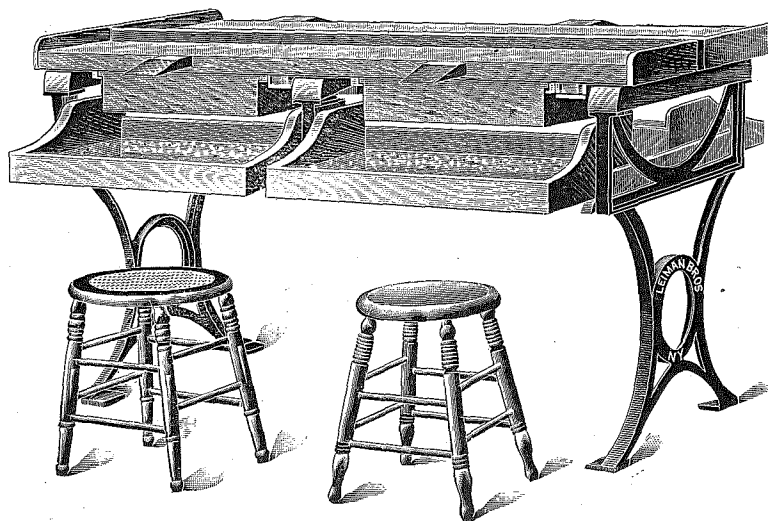


Fig. 2058

**A four seat bench (2 seats on each side) stools not furnished.**

	Single	Two or more seats per seat	Weight	Shipping Weight	Single seat Shipping Dimensions
Iron legs,	\$8.75	\$8.00	96 lbs.	130 lbs.	17 x 32 x 16 in.
Turned " "	8.25	Turned legs made in single seats only	65 lbs.	95 lbs.	17 x 32 x 35 in.
Average weight of large benches is 58 lbs. and 60 lbs. per seat, for iron and wood leg benches, respectively.					
Tops—2 inch hard, close grained maple, - 15 x 30 in. each seat.					
Finish—Heavily shellaced.					
Short brackets between every other seat instead of legs on large benches.					
Iron legs in two sections.					
Top draw—12 x 18 x 3 in. wood.					
Lower pan—17 x 27 x 2½ in. Galvanized iron, with wood frame.					
Cups on lower pans,	-	-	-	-	\$.50 each extra.
Cutout front tops,	-	-	-	-	.50 " "
Arm rest at each seat.	-	-	-	-	
File pin " " "	-	-	-	-	
Height to top,	-	-	-	-	33 in.







# LEIMAN BROS. PATENTED CONTINUOUS FEED SAND BLAST.

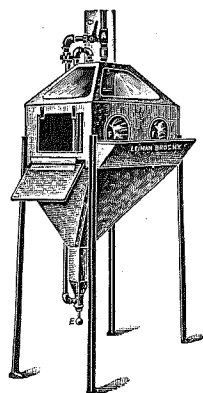


Fig. 2062

Special Sizes to  
Order.

With Iron Legs, or  
Hangs on the Wall.

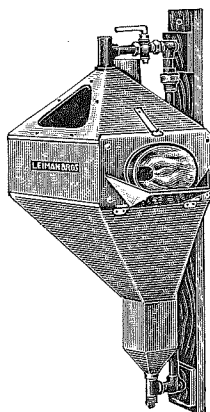


Fig. 2063

For Frosting Glass, Finishing Metals, Cleaning  
Castings, Patterns, Etc.

SENT ON TRIAL.

No.	Size	With legs,	Prices
1.	18 x 24.		\$50.
2.	12 x 15.		33.
2½.	12 x 15.	No legs,	30.
3.	10 x 12.		17.

Nos. 2½ and 3 are made to hang on the wall.

SEND FOR SPECIAL FOLDER  
Telling all about Sand Blasts.

## Oil Separators.

Size No.	Price
1.	\$4.00
1½.	4.00
1½.	5.00
2.	5.00
2½.	5.00

Used for extracting the oil from the air while  
operating Sand Blast Machines with Pressure Blowers,  
preventing spotting of the work.

## What they all say about our Sand Blast

"None gave us so much  
satisfaction."

"Gives us entire satis-  
faction."

"We are pleased."

"Reliable in every re-  
spect."

"Duplicate our order."

"Very much pleased in-  
deed."

"Entirely satisfactory in  
every respect."

"Glad to have you refer  
to us."

"Have used for the pas  
four or five years."

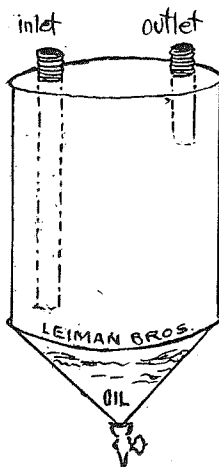


Fig. 2064

## Wash Basins and Drip Pans.

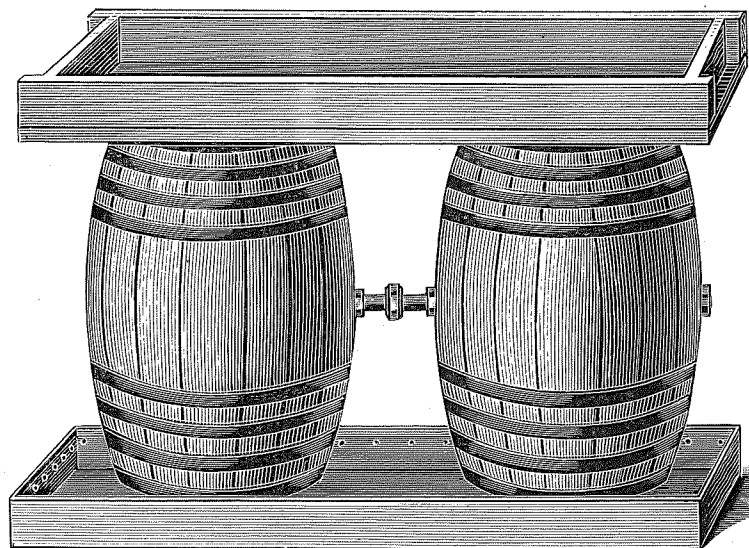


Fig. 2065

Many hundreds of dollars are saved each year in factories where  
workers in precious metals are employed, by means of this washing  
system.

The basins are made of 2 inch cypress, the sections interlocking,  
making the joints absolutely watertight. Brass strainer and plug  
furnished. The drip pan is made of heavy galvanized sheet iron with  
soldered joints and a wood frame, its purpose being to catch the water  
should the barrels or fittings leak.

### Wash Basins.

	Size (outside)	Weight	Price
1 bbl.	24 x 28 in.	35 lbs.	\$ 6.00
2 "	24 x 62 "	75 "	7.75
3 "	24 x 92 "	125 "	11.75
4 "	24 x 126 "	160 "	15.25

### Drip Pans.

	Size (outside)	Weight	Price
	24 x 26 in.	10 lbs.	\$3.50
	26 x 56 "	18 "	4.50
	26 x 90 "	32 "	6.75
	26 x 120 "	42 "	8.00

Barrels and Fittings not furnished.



## Crushing and Sifting Machines.

### Crushing Machine or Tumbling Barrel.

A strongly built machine for crushing crucibles, porcelain or similar matter. Made after the most approved ideas and in use in the leading factories where refining is carried on.

The material is placed in the crushing machine and the large cylindrical weight reduces it to a powder, after which it is placed in the sifting machine shown below.

**PRICE, - \$60.**

Roller, - 41 lbs.

Loose and tight

pulleys, 18 x 3 in.

Shaft, - 33 in.

Weight, - 385 lbs.

Shipping

weight, - 475 lbs.

Bearings babbitted

Speed, 50 revolutions per minute.

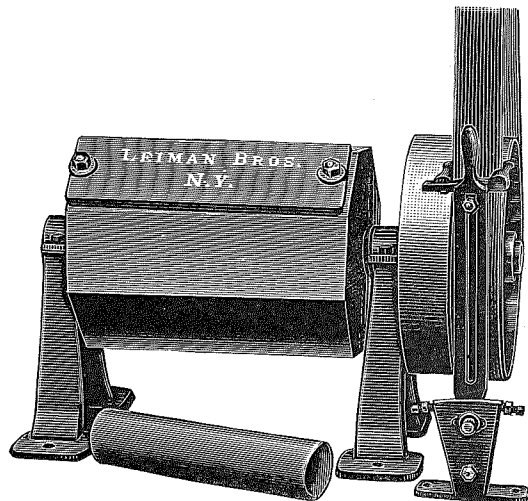


Fig. 2066

### Sifting Machine.

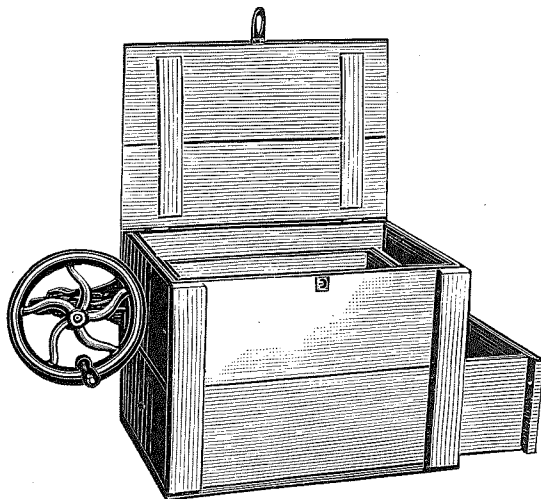


Fig. 2067

Weight, 110 lbs. Shipping weight, 140 lbs. Shipping dimensions, 22 x 40 x 22 in.

This machine is usually used in connection with the crusher which is shown above.

The powdered material from the crusher is placed in the upper compartment which contains the sieve.

The lateral motion of the sieve sifts the powder to the zinc lined draw below.

Particles not sufficiently reduced are returned to the crusher.

Dust proof with double body and interlocking seams.

**PRICE, \$32.**

With loose and tight pulleys, 6 x 1½ in., or hand-wheel.

## Melting and Refining Furnace.

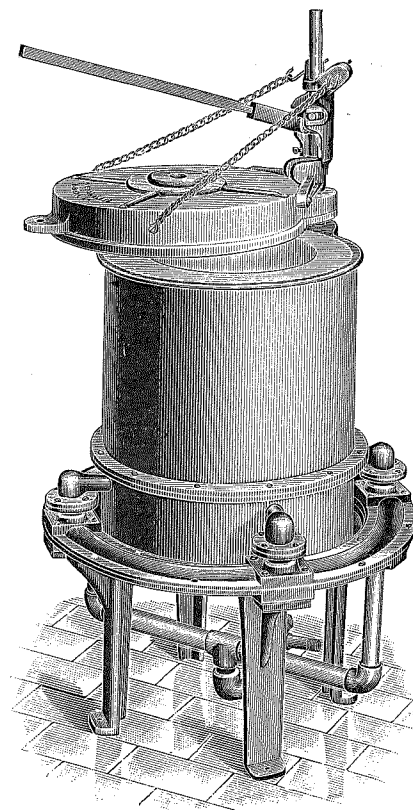


Fig. 2068

### Sweep Reducing Furnace.

For burning floor sweeps, hand washings and polishings or for many operations where offensive fumes arise.

**PRICE, - \$75.**

Floor space, - 27 x 36 in.

Weight, - 450 lbs.

Shipping weight, - 560 lbs.

Shipping measure, - 30 x 38 x 42 in.

Gas, per hour, - 60 cu. feet.

Size of iron bowl, - 8½ x 15½ in. inside.

The use of pressure blowers required with these furnaces. (See page 48.)

This furnace is designed for smelting down sweepings and filings for refining and melting brass or copper or for any purpose where a large crucible is needed.

Capacity, - 50 lbs.

Gas per hour, 4

burners, 150 cu. feet.

Gas per hour, 8

burners, 160 cu. feet.

Floor space, 16 x 16 in.

Weight, ready for

shipment, - 450 lbs.

**PRICE, 4 burners, \$ 90.**

**PRICE, 8 burners, 100.**

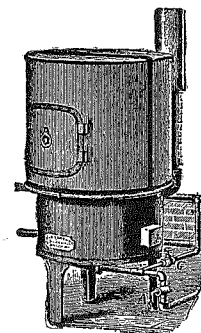


Fig. 2069

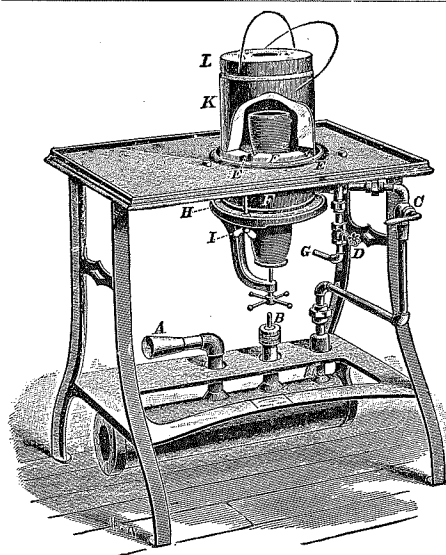


Fig. 2070

### Melter and Annealer Combined.

Melter same as above.

Annealer or boiling out furnace has a box 5 in. diameter, for annealing small work. Bars and strips are drawn through the slot.

**PRICE, \$100.**

Slot, 2 x 4 in.

Floor space, 21 x 41 in.

Gas pipe, 3/4 in.

Gas, 100 cu. ft. per hour.

Weight, 275 lbs.

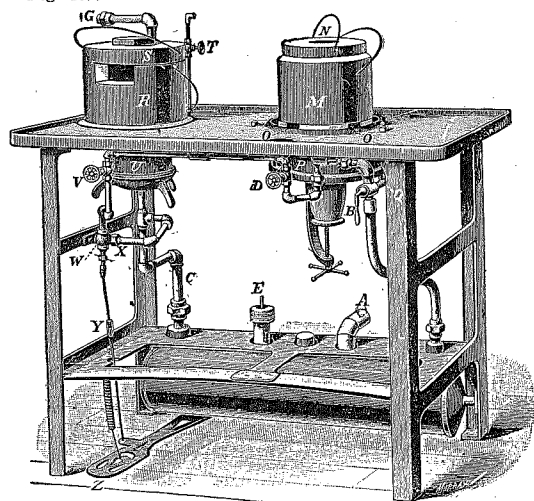


Fig. 2071.

Shipping weight, 350 lbs. Shipping measure, 24 x 36 x 45 in.

A pressure of the foot on treadle opens and closes main gas supply, which is regulated by the valve V.

The use of pressure blowers required with these furnaces. (See page 48.)

### No. 1.

### Melting Furnace.

Used principally for melting gold and silver, for assay work and for small smelts of copper, brass, etc. All parts detachable and easily replaced.

**PRICE, - \$50.**

Crucible

Black lead, No. 5,

5 3/4 in. high.

Round sand, 6 in. high.

Floor space, 24 x 29 in.

Height to table, 29 in.

Gas, 70 cu. feet per hr.

Melts 5 lbs. copper,

10 min.

Weight, - 180 lbs.

Shipping weight,

250 lbs.

Shipping measure,

26 x 32 x 34 in.

### Melting Furnaces.

These furnaces are designed for melting gold and silver, for assay work, and for melting brass and copper.

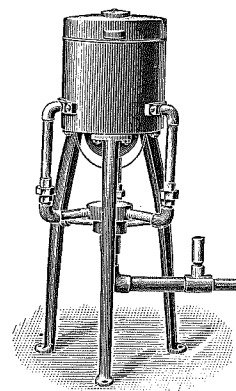


Fig. 2072

Capacity No. Furn- ace	Brass or Copper in 15 min.	No. black lead pot	Gas per hour	Floor space	Weight ready for ship- ment	Price
1	2 lbs.	1	40 cu. ft.	8 x 8 in.	40 lbs.	\$25.
2	6 "	2	65 "	11 x 11 "	110 "	35.
3	15 "	5	100 "	12 x 12 "	180 "	45.
4	24 "	8	125 "	14 x 14 "	300 "	60.
5	50 "	14	150 "	16 x 16 "	420 "	80.

Iron tables for above furnaces to hold mould,

crucibles, etc., - - - - - **\$6.50**

Pressure blowers required with these furnaces.

(See page 48.)

### "Little Giant" Melting Furnaces.

For melting gold and silver or for laboratory work.

**PRICE, - \$12.**

Black lead crucible,

No. 4/o 3 1/4 in. high.

Round sand,

4 in. high.

Weight, - 15 lbs.

Shipping weight, - - - - -

Shipping measure, - - - - -

Gas, - - - - -

Melts 10 oz. copper, - - - - -

Parts interchangeable.

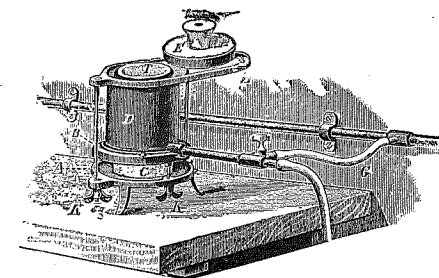


Fig. 2073

25 lbs.

12 x 12 x 14 in.

25 cu. ft. per hour.

10 min.

Foot bellows, (see page 42), or pressure blower, (see page 48), required with this furnace.



## Injector Melting Furnaces.

For Metallurgists, Jewelers, Chemists, Manufacturers of Artificial Gems, etc.

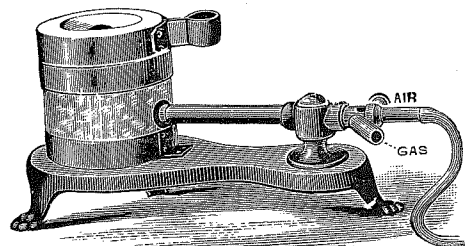


Fig. 2074

### No. 40A.

PRICE, - - - \$3.50

Crucible, No. 00.

Melts 10 oz. gold.

Gas, 10 cu. ft. per hour

Gas pipe, - - - ¾ in.

Dimensions, 7 x 7 x 15 in

PRICE, - - - \$4.50

Crucible, No. 1.

Melts, - - - 2 lbs.

Gas pipe, - - - ¾ in.

Dimensions, - 6 x 8½ x 15 in.

### No. 41A.

PRICE, - - - \$7.00

Crucible, No. 3.

Melts, - - - 6 lbs.

Gas pipe, - - - ¾ in.

Dimensions, - 9½ x 12 x 19 in.

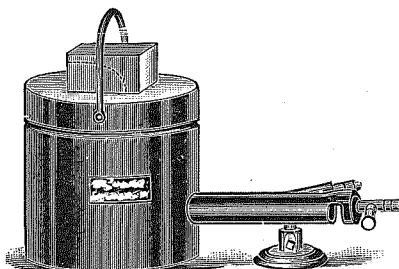


Fig. 2075

Blower, (see page 48), or foot bellows (see below) required for the operation of these furnaces.

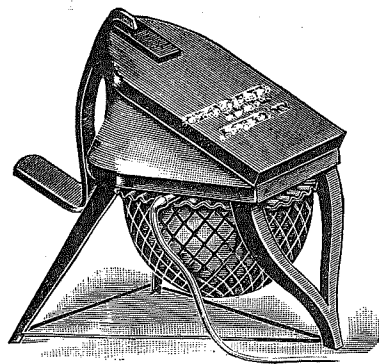


Fig. 2076

## Foot Bellows.

No.		Cu. ft. Per hour	Price
9.	No legs,	190	\$4.50
9A.	"	330	6.00
9B.	"	625	8.50
10.	With "	190	5.50
10A.	"	330	7.00
10B.	"	625	9.50

The rubber disc equalizes the pressure by forming a reservoir.

Adapted for blowpipes, melting furnaces, and wherever a steady pressure of air is required.

## Bench Forge.

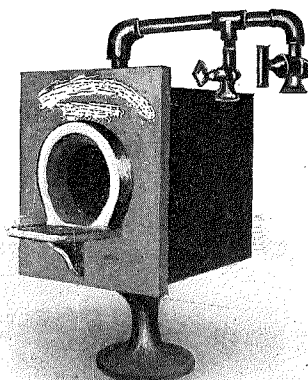


Fig. 2077

For forging, welding or brazing, and all small work.

Opening at front and back, the forge can be made into a small oven furnace by using the fire brick plugs.

PRICE, - - - \$17.50

Entrance, front and back, - 3 in. diameter.

Heating space, 3 in. diameter, 6 in. long.

Gas per hour, - 30 cu. feet.

Floor space, - 9 x 9 in.

Weight, ready for shipment, - 60 lbs.

Pressure blower (see page 48) required.

## Burno Crucibles.

No furnace necessary, melt with a blow pipe. Can be used 75 to 100 times. Gold melted in shorter time and with less gas than by any other process.

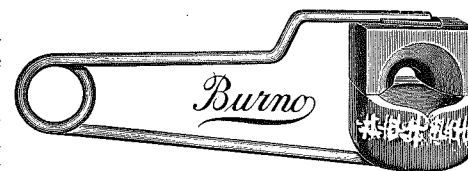


Fig. 2078

No. 1, holding 100 dwt.,	- - - - -	\$6.55 each.
No. 2, holding 50 dwt.,	- - - - -	.40 "
No. 3, holding 25 dwt.,	- - - - -	.25 "
Tongs for holding crucibles,	- - - - -	.10 "

(The same tongs will hold either of the crucibles.)

## Asbestos Boards.

Used for furnace or blow pipe work to protect bench or table from heat.

16 x 20 in. ½ in. thick,	- - - - -	2.50
12 x 18 in. ½ in. thick,	- - - - -	2.00

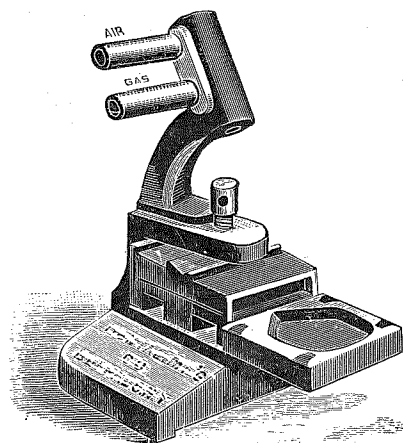
**No. 8d. Melting Arrangement.**

Fig. 2081

Ingot is adjustable up to  
1  $\frac{1}{8}$  in. wide.

Length, - - - 2 in.  
Thickness, - - -  $\frac{3}{16}$  in.

The crucible of carbon is fastened to a metal sheet which is clamped under the mould by the top screw. The blow pipe at the top bears directly on the mould and when melted the metal is run into the mould by simply tilting the whole.

No. 8d. Melting arrangement, with ingot mould, - -	<b>\$3.00</b>
Ingot mould, if ordered separately, - -	<b>1.25</b>
Extra carbon crucibles, without slides, for No. 8d, per dozen, - -	<b>1.00</b>
Extra carbon crucibles, with slides, for No. 8d, per dozen, - -	<b>1.75</b>

A foot bellows (see page 42) should be used.

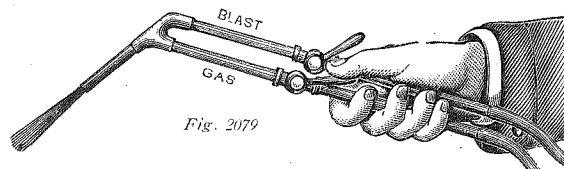
**Hand Blow Pipes.**

Fig. 2079

No. 8 C.	$\frac{1}{8}$ in.	<b>\$2.50</b>
" 8 E.	$\frac{3}{16}$ "	<b>3.50</b>
" 8 F.	$\frac{5}{16}$ "	<b>4.25</b>

Made of brass with air and gas valves.

**Mouth Blow Pipes.**

9 in.	<b>\$ .12 each.</b>
10 "	<b>.13 "</b>
11 "	<b>.14 "</b>
12 "	<b>.15 "</b>
13 "	<b>.16 "</b>



Fig. 2080

**Rubber Tubing.**

$\frac{3}{8}$ in.	Per foot, - - -	<b>\$ .23</b>
$\frac{1}{2}$ "	" - - -	<b>.35</b>

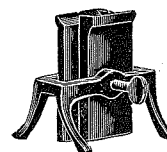
**Ingot Moulds.**

Fig. 2082

**No. 1, Plate Ingot.**

1 $\frac{1}{8}$ x 4 in. x $\frac{1}{4}$ .
1 $\frac{1}{8}$ x 4 in. x $\frac{3}{16}$ .
Price, - - -
Weight, - - -

**\$3.00**  
5 lbs.

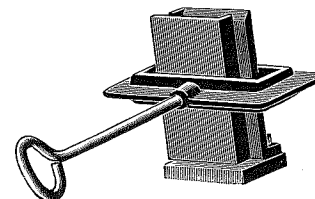


Fig. 2083

**No. 2, Plate Ingot.**

3 x 6 x $\frac{5}{16}$ in., - - -	<b>\$4.50</b>
3 x 6 x $\frac{3}{8}$ in., - - -	<b>5.00</b>
3 x 6 x $\frac{1}{2}$ in., - - -	<b>5.00</b>
Weight, - - -	12 lbs.

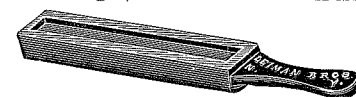


Fig. 2085

**No. 4, Flat, Cast Iron.**

2 sides. 1 x 10 x $\frac{1}{4}$ in. - -	<b>\$1.75</b>
1 side. $\frac{3}{8}$ x 10 x $\frac{1}{4}$ in. - -	<b>1.75</b>
Weight, 3 squares. $\frac{3}{8}$ x 2 x $2\frac{1}{4}$ in. - -	10 lbs.

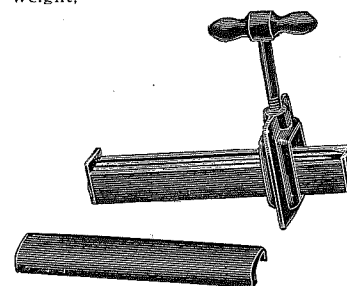


Fig. 2084

**No. 3, Square and Flat.**

3 square grooves only.	<b>\$5.50</b>
$\frac{1}{4}$ , $\frac{5}{16}$ , and $\frac{3}{8}$ in.	
Same as above.	
Also 1 x 11 in. flat, - - -	<b>6.50</b>
Weight, - - -	10 lbs.



Fig. 2086

**No. 3B. PRICE, - - \$5.00**  
Same as No. 3. Square grooves only.

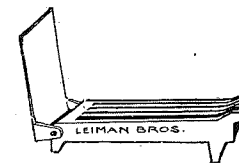


Fig. 2087

**No. 5, French Style.**

3 square grooves, $5\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{5}{16}$ or	<b>\$5.00</b>
x $\frac{3}{8}$ in.	
Plate, $5\frac{1}{4}$ x $\frac{1}{4}$ x 1 in.	
Weight, - - -	8 lbs.

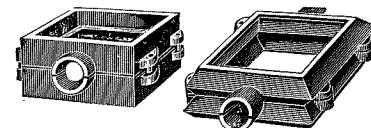


Fig. 2089

**Crucible Tongs**

Fig. 2088

**Casting Flasks.**

No.	Size	Weight	Price
1.	2 x 2 $\frac{3}{4}$ in.	3 lbs.	<b>\$1.25</b>
2.	2 $\frac{1}{2}$ x 2 $\frac{3}{4}$ in.	3 "	<b>1.90</b>
3.	4 x 5 in.	4 "	<b>2.40</b>
4.	4 x 6 in.	4 "	<b>2.90</b>

Malleable iron  
finished in enamel.



**Hand Draw Tongs.**

Hardened steel jaws.

No.	Length	Jaws	Price
1.	8½ in.	¾ in.	\$1.50
2.	12 "	¾ "	2.25
3.	14 "	1 "	2.75



Fig. 2090

**Machine Draw Tongs.**

Hardened steel jaws. Strong and Rigid.

PRICE, - - - - \$6.50

Length, - - - - 9 in.

Jaws, - - - - 1¼ in. wide.

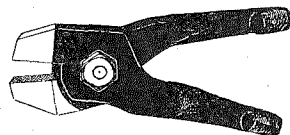


Fig. 2091

**Soldering Lamps.**

The standard soldering burners used by jewelers everywhere.

Made of brass, with lava tip, pilot light and atmospheric burner, japanned base.

PRICE, - - - - \$1.25

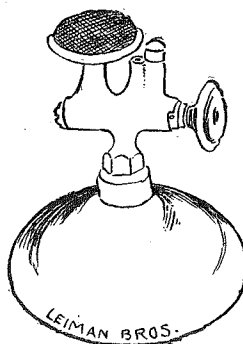


Fig. 2092

**Sight Feed Oilers.**

By using these oilers, the amount of oil as well as the flow may be seen and regulated. No machine can run dry when equipped with them, as the amount of oil is always in view.

The top screw starts, stops and regulates the flow of oil. Nicely nickle-plated.

No.		
163.	⅛ in. size of shank pipe thread,	\$ .60 each.
165.	¼ " " " " " "	.75 "
168.	⅜ " " " " " "	1.20 "
169.	½ " " " " " "	1.60 "

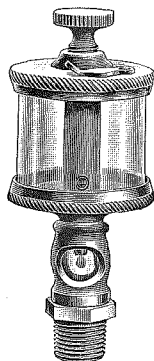


Fig. 2093

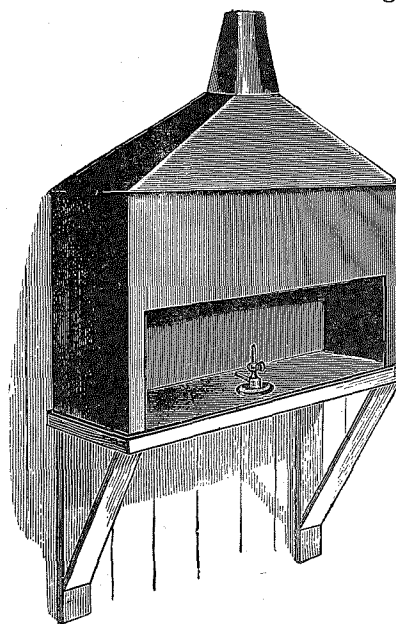
**Soldering Hoods.**

Fig. 2094

Made of sheet iron for carrying off the fumes of soldering. Solder burners not furnished.

For	Size	Price
One man	12 x 18 x 46 in.	\$ 7.75
Two men	12 x 48 x 46 in.	10.00
Three men	12 x 72 x 46 in.	14.00
Four men	12 x 90 x 46 in.	21.00

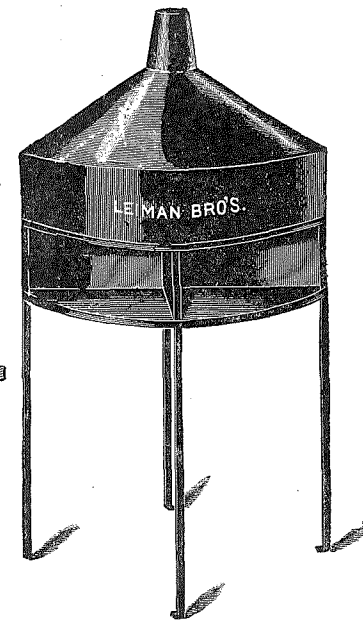


Fig. 2095

Round—with iron legs for four men.

For the middle of the room.

PRICE, - - - - \$25.

Size, - - - - 48 x 48 in.

**Melting Hood.**

Made of sheet iron for carrying off the fumes of melting—with iron wall brackets.

PRICE, with iron table instead of brackets, - - - - \$14.25

PRICE, with wall brackets, - - - - 7.75

Size, - - - - 18 x 30 in.

Height, - - - - 46 in.

Weight	Shipping weight	Shipping dimensions
38 lbs.	68 lbs.	

With table, 60 lbs. 90 lbs. 22 x 33 x 80 in.

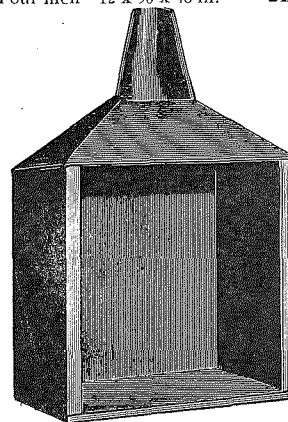


Fig. 2096

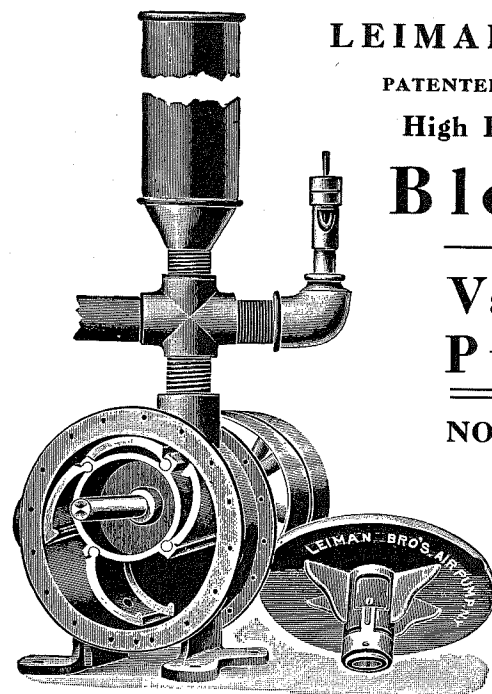


Fig. 2097

# LEIMAN BROS.

PATENTED POSITIVE

High Pressure

**Blowers**

— AND —

**Vacuum  
Pumps****NOISELESS.****TAKES UP ITS  
OWN WEAR.**

for  
Melting  
Soldering  
Brazing  
Sand Blasting  
and many other  
purposes

Size of Blower	Cubic inches Delivered per Revolution	Maximum Speed Revolutions per Minute	Diameter of Pulleys	Face of Pulleys	Horse Power Required — Approximate	Lbs. Max m Pressure to Sq. Inch	Size of Inlet and Outlet	Weight	Floor Space Inches	PRICE
A	17	600	3	1	1-10	10	1 in.	20	10 x 6	17.00.
B	30	600	4	1 1/4	1/8	10	1 1/4 "	26	12 x 8	23.00
C	80	400	5	1 1/2	1/4	10	1 "	43	15 x 10	30.00
D	200	300	7	2	1/2	10	1 1/2 "	76	19 x 15	45.00
E	400	250	12	2 1/4	1	10	1 3/4 "	153	24 x 18	55.00
F	675	200	12	3	1 1/2	10	2 "	250	28 x 22	80.00
G	1400	200	14	3	2 1/2	10	2 1/2 "	400	31 x 24	130.00

Horsepower required depends entirely upon speed and pressure or vacuum required.

SEND FOR SPECIAL PAMPHLET

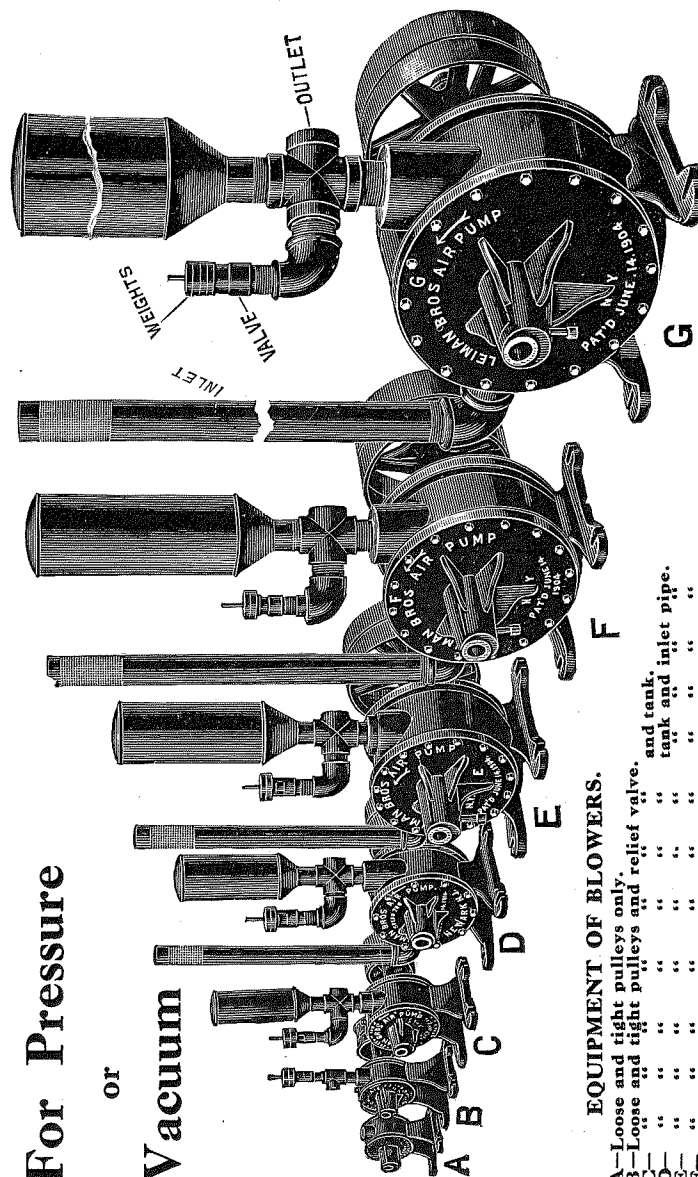


Fig. 2098

LEIMAN BROS. LINE OF PRESSURE BLOWERS. Seven sizes—Showing equipment.

**For Pressure  
or  
Vacuum**

**EQUIPMENT OF BLOWERS.**

A—Loose and tight pulleys only.  
B—Loose and tight pulleys and relief valve.  
C— " " " " and tank.  
D— " " " " tank and inlet pipe.  
E— " " " " " " "  
F— " " " " " " "  
G— " " " " " " "



**Wire Twisting Machine.****PRICE, - - - - - \$9.00**

For twisting wire and chain links. Made to fasten in bench vise and worked by hand. The gears and frame are very strong and the jaws extra heavy.

6 in. gear.

Height, - - - - - 10½ in.

Jaws, - - - - - ½ in.

Weight, - - - - - 8 lbs.

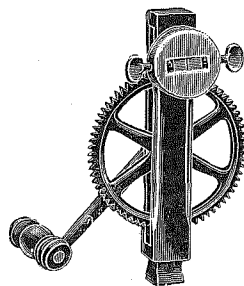


Fig. 2099

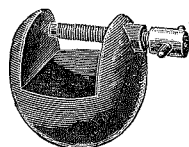


Fig. 2100

**Engraving Balls.**

These balls are for use of engravers and are furnished in two sizes with large hardened cut steel screws.

	<i>Small</i>	<i>Large</i>
Diameter,	4¾ in.	5¼ in.
Size of opening,	2¾ in.	3 in.
Weight,	10 lbs.	14 lbs.
<b>PRICE,</b>	<b>\$2.00</b>	<b>\$2.50</b>

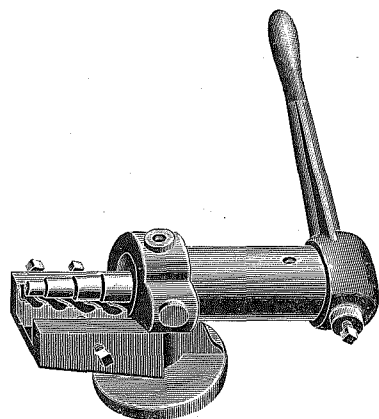


Fig. 2101

**Ring Bender.**

Of the best design, built with a maximum of strength for rapid and accurate work.

**PRICE, - - - \$10.**

2 dies furnished.

4 sizes on shaft.

Length of shaft, - 2½ in.

Weight, - - - 11 lbs.

**Platform Scales.**

With set of weights complete—five sizes—capacity 2 to 32 oz.

2 oz.	4 oz.	6 oz.	8 oz.	16 oz.	32 oz.
\$3.50	4.00	5.00	5.75	7.75	10.00

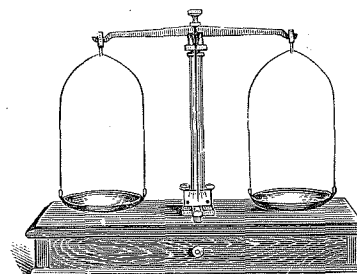


Fig. 2102

**Ring Bending Blocks and Punch.**

A hardened steel tool with graduated grooves.

**PRICE, complete, - - - \$3.00**

Fig. 2103

**Dapping Dies.**

Made of iron.

1½ in.	1¾ in.	2 in.	2¼ in.	2½ in.	2¾ in.	3 in.
\$1.50	1.60	1.75	2.25	2.50	4.00	5.00

**Punches and Cutters.****In Sets.**

	<i>Per set</i>
Set of 18 Punches and Cutters, -	\$2.25
" " 24 " " " " -	3.00
" " 30 " " " " -	3.50
" " 36 " " " " -	4.75

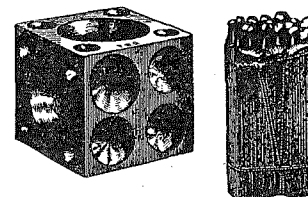


Fig. 2104

**Speed Indicators.****No. 104. PRICE, - - - \$1.00**

Everyone using power machinery should secure one of these speed indicators so that they may be able to accurately gauge the speed of any machine. The working parts are encased and two extra rubber tips are furnished as shown.

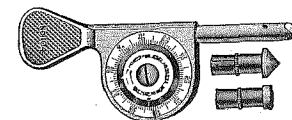


Fig. 2105

**Cylinder and Machine Oil.****Cylinder Oil for Blowers.**

One gallon can, -	\$1.20	Two gallon can, -	2.25	Five gallon can, -	5.00
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**Machine Oil.**

One gallon can, -	\$ .90	Two gallon can, -	1.75	Five gallon can, -	4.00
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## Metal Shears and Rod Cutters.

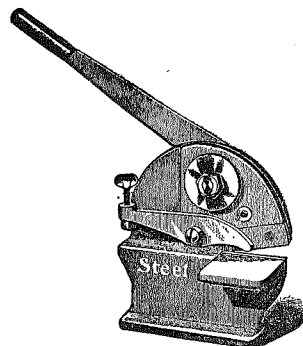


Fig. 2106

**PRICE, - - - - - \$20.**

Will cut flat iron up to  $\frac{3}{16}$  in.

" " iron rods up to  $\frac{5}{16}$  in.

Length of blades, - - - - - 3 in.

Weight, - - - - - 25 lbs.

One set extra blades furnished with machine.

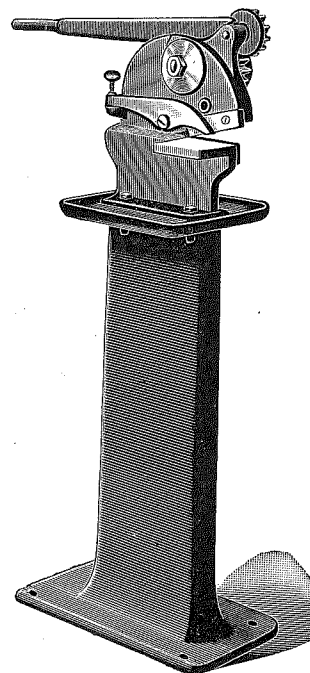


Fig. 2107

### No. 2.

**PRICE, without column, - - - \$25.**

" " with " - - - 30.

Will cut flat iron up to  $\frac{1}{4}$  in. thick.

" " iron rods up to  $\frac{3}{8}$  in. diam.

Length of blades, - - - - - 4 in.

Net weight without column, - 36 lbs.

" " with " - 106 lbs.

One set extra blades furnished with machine.

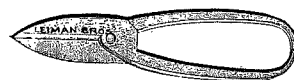


Fig. 2108

Length.	7½ in.	8½ in.	10 in.	12 in.
Jaws.	1½ in.	2¼ in.	2¾ in.	3 in.
<b>PRICE.</b>	<b>\$1.25</b>	<b>1.40</b>	<b>1.65</b>	<b>2.00</b>

## Plate Shears. Right or Left Hand.

## Metal Shears.

All shears have a limited capacity, and should not be used to cut larger stock than sizes given.

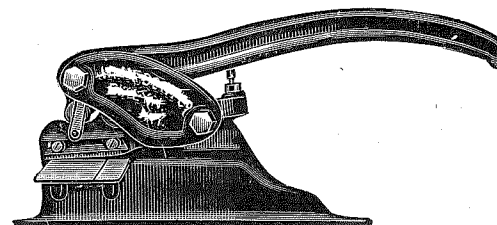


Fig. 2109

### No. O.

**PRICE, - \$10.**

Will cut iron up to  $\frac{1}{8}$  in. thick.

Upper jaw is a steel casting.

Table is removable.

Length of

blades, - - 3 in.

Weight, 15½ lbs.

### No. 1.

**PRICE, - - - - - \$15.**

Will cut flat iron up to  $\frac{1}{8}$  in. thick. Also furnished for cutting iron rods up to  $\frac{3}{16}$  in. diam. if desired.

Length of blades, - - - - - 3 in.

Weight, - - - - - 20 lbs.

One set extra blades furnished with machine.

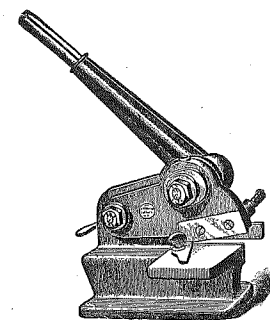


Fig. 2110

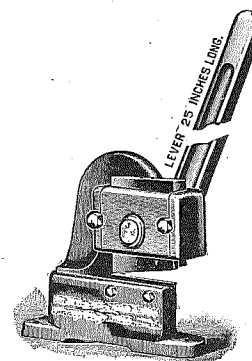


Fig. 2111

### No. 150.

**PRICE, - - - - - \$20.**

Will cut iron up to  $\frac{3}{16}$  in. thick.

Length of blades, - - - - - 4 in.

Weight, - - - - - 31 lbs.



## No. 100. Bench Vises.

With stationary or swivel (revolving) base.

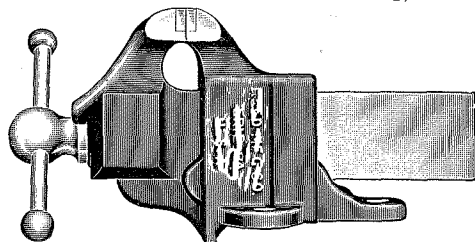


Fig. 2112

Width of Jaw	Weight		Price Stationary	Price Swivel
	Sta.	Swivel		
2½ in.	17 lbs.	20 lbs.	\$ 4.75	\$ 5.20
3 "	22 "	28 "	6.00	7.50
3½ "	27 "	37 "	7.00	8.75
4 "	42 "	52 "	8.50	10.50
4½ "	53 "	65 "	10.00	12.50
5 "	72 "	90 "	13.00	16.00
5½ "	102 "	117 "	18.50	22.00
6 "	130 "	152 "	25.00	30.00
7 "	210 "	235 "	37.50	42.50

## Mechanics' Vises.

Jaw faces are detachable and can be replaced at pleasure.

Width of Jaw	Weight	Price
1½ in.	3½ lbs.	\$ 3.00
2 "	11 "	4.00
2½ "	22 "	5.50
3 "	41 "	7.00
3½ "	41½ "	9.00
4 "	54½ "	10.00
4½ "	55 "	12.50
5 "	78 "	17.00

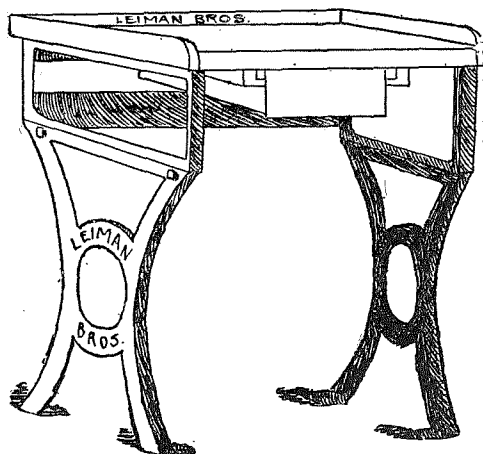


Fig. 2113

## Vise Benches.

Has a 2 inch hard maple top, - 15 x 30 in.

Drawer, 12 x 18 x 3 in.

Weight about Price  
Iron legs, 68 lbs. \$7.25

Strong and rigid.

## Bench Vises.

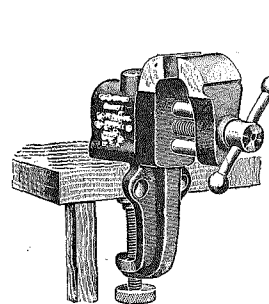


Fig. 2114

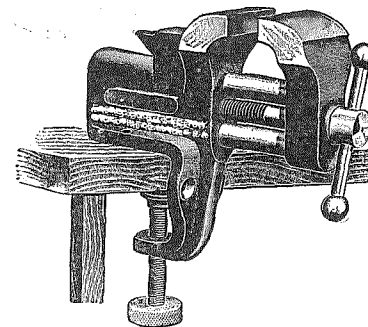


Fig. 2115

These vises have steel screws and guides.

No.	Jaw
160.	1 in.
161.	2 in.

Strong and rigid with small anvil back.

Weight	Price
1½ lbs.	\$1.00
3½ lbs.	2.00

## Oval Slide Vise.

A nut at rear end of the screw fastens the latter in place. It provides for taking up all wear, preventing any lost motion.

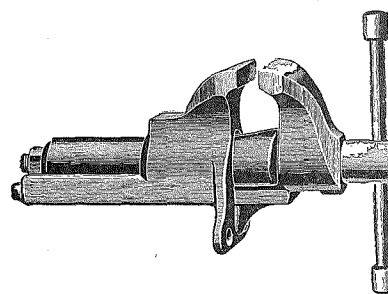


Fig. 2116

Width of Jaw	Weight	Price
2 in.	7 lbs.	\$2.50
2½ in.	11½ lbs.	2.70
3 in.	17½ lbs.	3.60
3½ in.	27½ lbs.	4.65
4 in.	35½ lbs.	6.70
4½ in.	41½ lbs.	9.65

Note weights of these vises.

## Hand Vises.

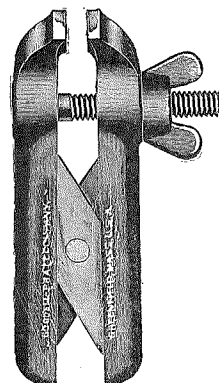


Fig. 2117

No. 96.  
PRICE, - \$1.50  
With parallel jaws, 1½ x ¾ in.  
Opens, - 1½ in.  
Length, 4½ in.

No. 97.  
PRICE, - 2.00

No. 98.  
PRICE, - 1.75  
With double screws geared together insuring a very firm grip.  
Drop forged—gears steel.  
Jaws, 1½ x ¾ in.  
Open, - 1½ in.

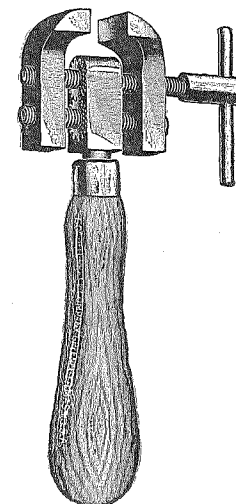


Fig. 2118

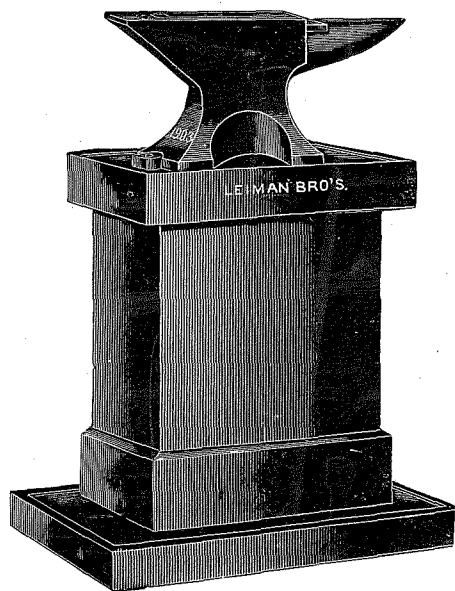


Fig. 2119

### Anvils and Blocks.

These anvils have thoroughly hardened cast steel faces tempered and perfectly true and are recommended. The horn is very tough and well proportioned.

Weight	Horn	Face	Approximate size of base	Price
20 lbs.	4 in.	2 1/4 x 6 1/4 in.	6 1/2 x 6 in.	\$4.00
30 "	4 "	2 1/4 x 7 1/4 "	6 3/4 x 6 1/2 "	4.30
40 "	5 1/4 "	3 x 8 3/4 "	7 x 7 "	4.50
50 "	6 1/2 "	3 x 9 1/4 "	7 1/4 x 7 1/2 "	5.00
60 "	6 1/2 "	3 x 10 1/4 "	7 1/2 x 8 "	5.50
70 "	6 1/2 "	3 1/4 x 10 1/2 "	7 3/4 x 8 1/2 "	6.00
80 "	7 1/2 "	3 1/4 x 10 1/2 "	8 x 9 "	7.00
90 "	7 1/2 "	3 3/4 x 11 "	8 1/4 x 9 1/2 "	8.00
100 " and up				.09 a lb.

### Anvil Blocks.

(See illustration above.)

These anvil blocks are filled with a composition which absorbs the shock and strain and deadens the noise, making a very desirable appliance for the factory.

#### Anvil Blocks.

Anvil	Weight	Floor space	Price
20 lbs.	58 lbs.	13 x 21 in.	\$4.50
30 "	"	"	4.50
40 "	"	"	4.50
50 "	"	"	4.50
60 "	"	"	5.00
70 "	86 lbs.	13 1/2 x 21 1/2 in.	5.00
80 "	116 "	16 x 23 "	5.50
90 "	"	"	5.50
100 "	"	"	6.00 up

### Anvil Hammers.

1 lb.	2 lbs.	3 lbs.
\$5.50	1.00	1.25

Made of drop forged steel with polished face and especially adapted for anvil work.

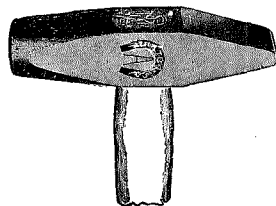


Fig. 2120

### No. 1. Hand Screw Press.

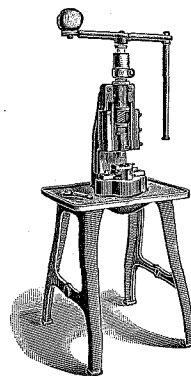


Fig. 2121

PRICE, - - - - - \$75.

For blanking and bending.

Cuts blanks 1 1/2 in. diam., 1/8 in. thick, hard brass.

Stroke,	- - - - -	4 1/8 in.
Slide to plate,	- - - - -	8 in.
Center to back,	- - - - -	3 1/4 in.
Weight,	- - - - -	450 lbs.
Floor space,	- - - - -	28 x 28 in.

### No. 1A.—Foot Power Presses.

Cuts blanks, 1 in. diam., .08 in. brass.

PRICE, - - - - - \$35.

Weight,	- - - - -	335 lbs.
Stroke,	- - - - -	1 3/4 and 2 1/4 in.
Hole in bed,	- - - - -	3 in.
Slide to plate,	- - - - -	5 3/4 in.
Bed,	- - - - -	6 x 11 1/4 in.
Table,	- - - - -	15 x 23 1/2 in.
Floor space,	- - - - -	24 x 24 in.
Height,	- - - - -	60 1/2 in.

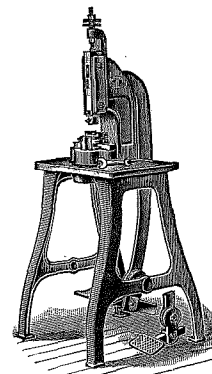


Fig. 2122



# LEIMAN BROS. PATENTED IMPROVED SAND BLAST.

**\$50.**

**SENT ON  
TRIAL.**

**Fully  
Guaranteed.**

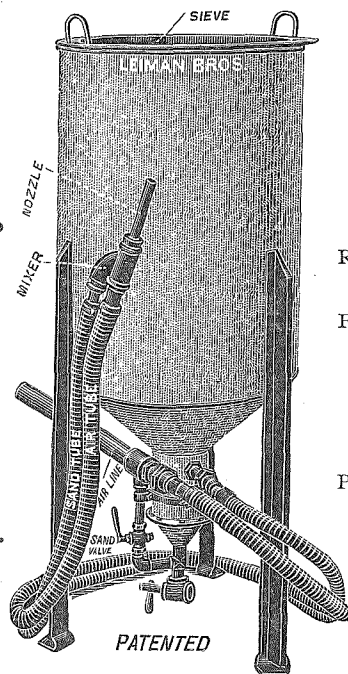


Fig. 2123

For Low or High Pressure. For Foundry or Finishing Room.

**SEND FOR SPECIAL FOLDER**  
Telling all about Sand Blasts.

**Sand Blasting Helmets.**

**PRICE, - - - - - \$10.**

Made of canvas. Fits around a derby hat and over the shoulders with a strip of fine wire gauze for the eyes.

## WHAT THE SAND BLAST MAY BE USED FOR.

### Cleaning Castings.

- " Patterns.
- " Coreboxes.
- " Buildings.
- " Bridges.
- " Steel.
- " Iron.
- " Wood.
- " Stone.

### Removing Paint.

- " Rust.

### Frosting Glass.

- " All Metals.
- " Hardware.
- " Gas Fixtures.
- " Electric "

Producing weathered  
effect on furniture  
and woodwork.

**LOW IN PRICE, LIGHT  
IN WEIGHT, SIMPLE  
IN OPERATION.**

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Metal shears and rod cutters .....	52-53	Separators, oil .....	36
Motors and drills .....	28	Setters' benches, diamond .....	34
Motors, electric .....	22	Shears, plate .....	52
Moulds, French ingot .....	45	Shears and rod cutters, metal ...	52-53
Moulds, ingot .....	45	Sifting machines .....	38
Mouth blow pipes .....	44	Sight feed oilers .....	46
Oil, blower .....	51	Single geared hand corrugated rolls.	8
Oil, cylinder and machine .....	51	Single geared hand flat rolls .....	6-7-8
Oilers, sight feed .....	46	Single geared hand ring rolls .....	6-7
Oil separators .....	36	Single geared hand wire rolls .....	6-7-8
Outfits, polishing dust collecting....	21	Slide vises, oval .....	55
Oval slide vises .....	55	Soldering hoods .....	47
Pearl drilling machines .....	29	Soldering lamps .....	46
Pickle or acid pans, copper .....	35	Speed indicators .....	51
Pickle pots, lead acid boiling .....	35	Speed lathes, bench .....	26
Plate shears .....	52	Spindles, lapidary .....	24
Platform scales .....	51	Spindle styles, polishing heads .....	13
Polishing benches .....	20	Stationary bench vises .....	54-55
Polishing dust collecting outfits .....	21	Styles, polishing head spindle .....	13
Polishing dust hoods .....	20	Sweep reducing furnaces .....	39
Polishing heads .....	14-15-16-17-18	Swivel bench vises .....	54
Polishing heads, covered .....	15	Taper bracelet mandrels .....	12
Polishing head spindle styles .....	13	Tongs, crucible .....	45
Polishing lathes .....	18	Tongs, hand draw .....	46
Polishing machines, foot power .....	19	Tongs, machine draw .....	46
Power flat rolls, triple geared .....	3	Triple geared power flat rolls .....	3
Power bench drills .....	30	Tubing, rubber .....	44
Power draw benches, rotary .....	11	Tumbling barrels, crushing machines	38
Power ring rolls, double geared....	4	or .....	38
Power, sensitive drill presses .....	28	Twisting machines, wire .....	50
Power wire rolls, double geared....	4	Vacuum pumps .....	48-49
Presses, sensitive drill .....	27-28-29	Vise benches .....	54
Presses, power sensitive drill .....	28	Vises, hand .....	55
Presses, foot power sensitive drill...	29	Vises, mechanics' .....	54
Presses, foot power .....	57	Vises, oval slide .....	55
Presses, hand screw .....	57	Vises, stationary bench .....	54-55
Pressure blowers .....	48-49	Vises, swivel bench .....	54
Pumps, vacuum .....	48-49	Wash basins and drip pans .....	37
Punches, ring bending blocks and....	51	Winding machines, bracelet .....	12
Refining furnaces, melting and....	39	Winding mandrels, bracelet .....	12
Ring benders .....	50	Wire rolls, double geared hand ....	5
Ring bending blocks and punches....	51	Wire rolls, double geared power ....	4
Ring mandrels .....	12	Wire rolls, single geared hand....	6-7-8
Ring rolls, double geared hand....	5	Wire twisting machines .....	50
Ring rolls, double geared power....	4	Work benches, jewelers' .....	32-33



# Jewelry Plants

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